

Aclima and The Basque environmental sector

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Responsible for standards and quality

Moscow, October 2015

01

Aclima: Basque Environment Cluster

02

The Basque environmental sector



01

Aclima: Basque environmental Cluster



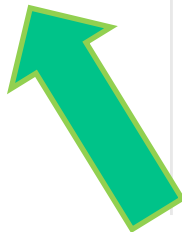


Where we are?

Basque Country

Surface area: 7,234 sq km
Population: 2,172,877 inhab.
GDP per capita: 32,500 €
Industrial GDP: 22,8 %
Expenditure on R&D: 2,09%

Cities:
BILBAO
DONOSTIA-SAN SEBASTIÁN
VITORIA-GASTEIZ





20
years
experience



92 Partners

73 Private enterprises

3 Basque Government Departments

3 Provincial Governments

2 Cities

4 Public Authorities

3 Chambers of commerce

4 Universities

**Private enterprises,
institutional partners and
the world of knowledge**

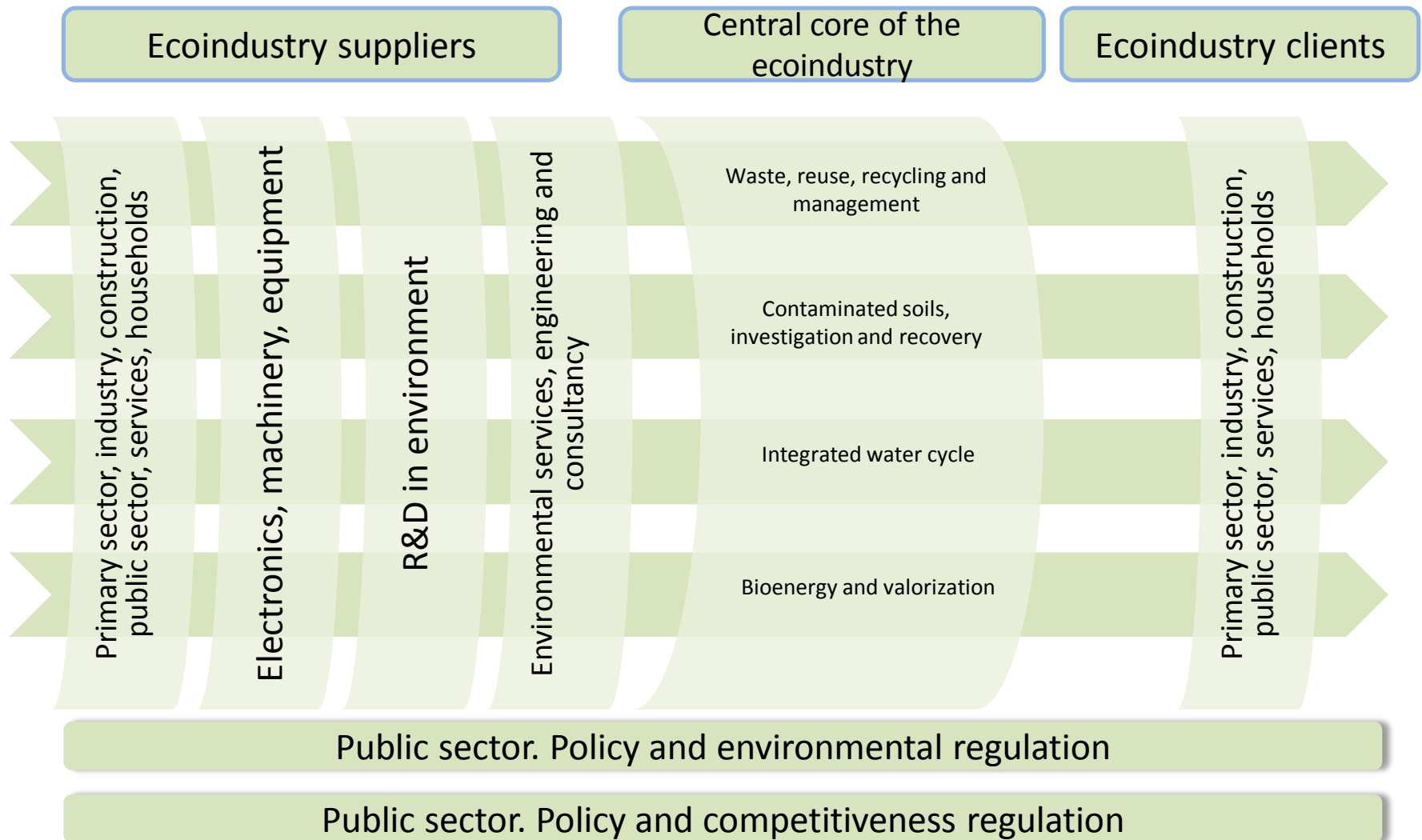


Who we are?

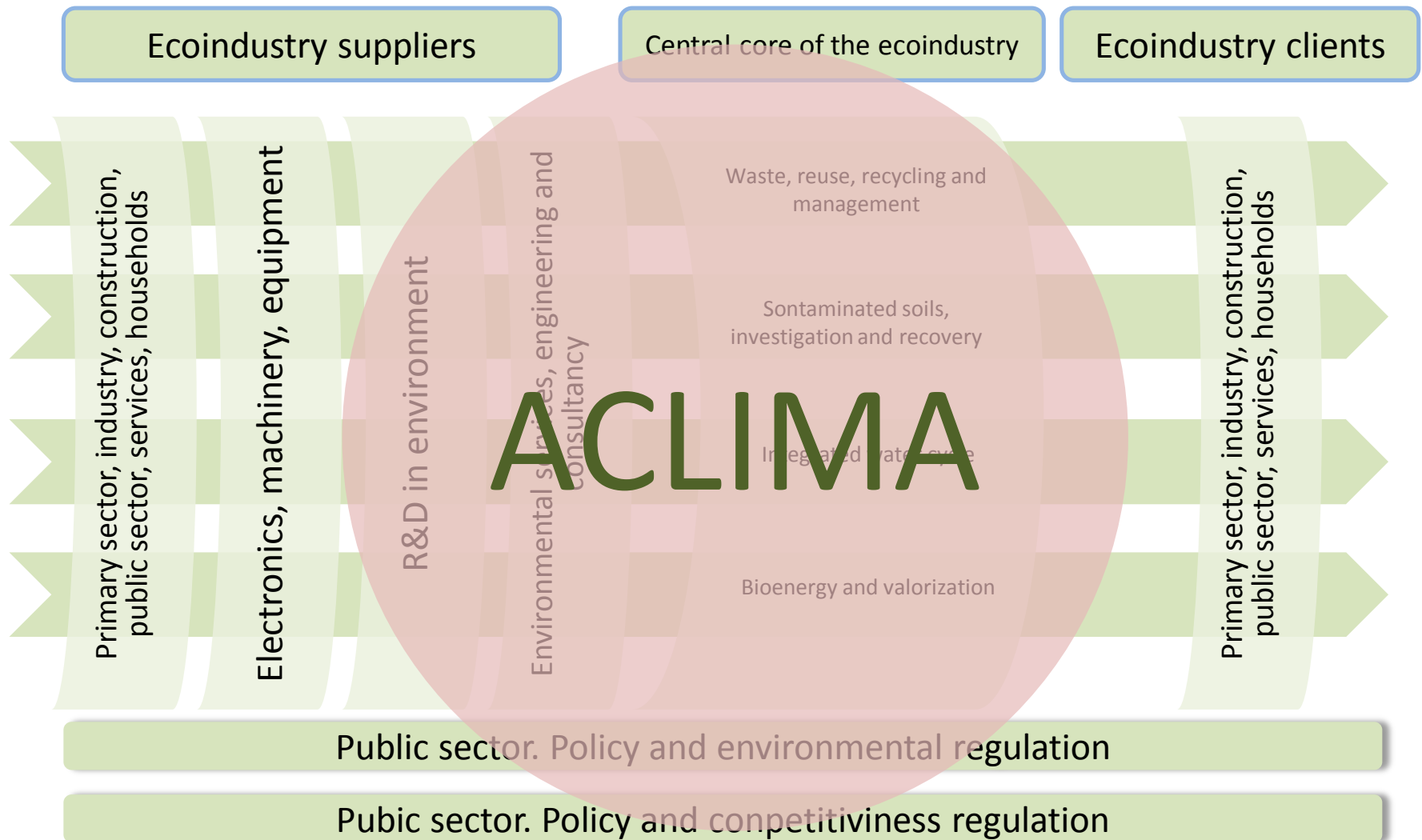
**4.150 people
dedicated to the
environment**



A transversal cluster interrelating with the whole economy



With a strong representation at the core of the Ecoindustry





What we do?

- ✓ We represent the basque environmental sector
- ✓ Improve competitiveness through collaboration
- ✓ We defend the Sector
- ✓ Public-private collaboration
- ✓ Dialogue with the administration on environmental issues
- ✓ Dissemination and awareness
- ✓ Business opportunities
- ✓ Meeting point between offer and demand
- ✓ Technological surveillance



02

The Basque environmental sector





Waste



Water



Soils



Biodiversity and ecosystems



Air and Climate change



Ecoefficiency and ecodesign



Air

Profile & capacity
CLEANTECH

About us

We are a group of companies and entities which contribute to protecting the atmosphere in the area of influence of our activities and that of our clients through Cleantech

Value chain

Feasibility, studies, projects

R+D+i/ Technology Centres IK4, TECNALIA

Engineering Firms & Consultancies CIMAS, EKOTEK, EPTISA, IDEMA, IDOM, INGURU, KIMIKER, LIMIA&MARTIN, MIRANDAOLA, ONDOAN, SENER, SYNERTECH, TRADEBE

Building, assembly, operating, maintenance

Integral turnkey solutions COBRA, ELECNR

ICTs IBERMÁTICA, INDRA

Other services/ Public realtions ICG2025/ Inspection, control, certification EUROCONTROL/ Laboratories ADIRONDACK, IK4, TECNALIA / Promotion of new companies SAIOLAN / Legal services MAS ABOGADOS

Reference industrial plants / Basque IPPC industries with best techniques available for air protection ARCELOR MITTAL, BIZKAIA ENERGÍA, CEMENTOS LEMONA, FYM-CEMENTOS REZOLA, IBERDROLA

Support agents (public-private collaboration, institutions, associations & academic sector)

Clusters

ACLIMA / Energy Cluster

Government agencies

Environment: IHOBE / Business development: SPRI

Government

Basque Government / Provincial Councils (Álava, Biscay & Gipuzkoa)

Professional organisations

Chambers of Commerce (Álava, Bilbao & Gipuzkoa)

Universities

Deusto / Mondragon / Navarre / University of the Basque Country

What we do

We contribute to improving the air quality mitigating the impact of atmospheric emissions, noise, odours and electromagnetic radiation

Our fields

Atmospheric emissions	Noise
Odours	Electromagnetic radiation

Our focus

Prevention at source	Corrective measures
Mediation & control	Fluid communication with parties involved



Our CLEANTECH solutions to identify environmental effects and plan responses

- > Predictive mathematical modelling. Estimating, measuring & calculating emissions
- > Continuous measurement & monitoring systems.
- > Surveillance networks & alert systems.
- > Plans to improve the air quality
- > Inspection & control.
- > Memory & project for facilities
- > Plus ...



Our CLEANTECH solutions to protect the air & atmospheric quality

- > Best techniques available both for the prevention and end of tube treatment of emissions (collection systems, particle separation, washing, catalytic treatment, etc.)
- > Insulation & acoustic barriers
- > Odour reduction systems.
- > Plus ...



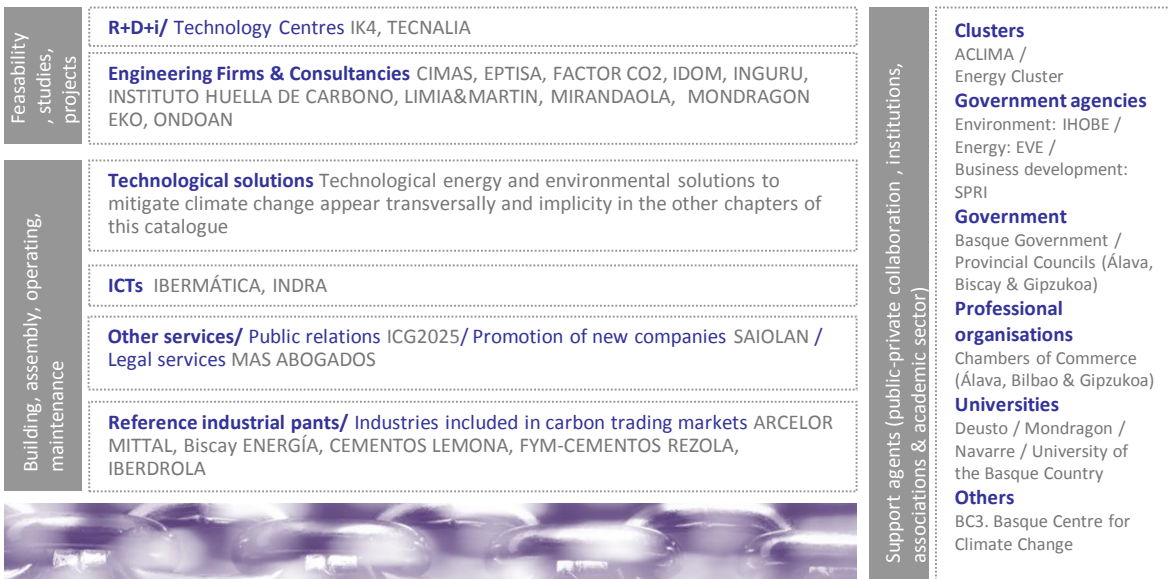
Climate change

Profile & capacity
CLEANTECH

About us

We are a group of companies and entities committed to fighting against climate change both in our own activities and in the services we provide to third parties specialised in climate change.

Value chain



What we do

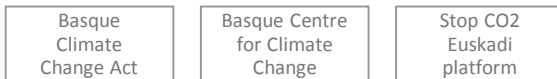
We contribute to mitigating climate change and developing adaptation strategies using Clean Technologies.

Our focus



Nuestra estrategia

Some of our instruments



Our Cleantech consultancy specialised in public and/or voluntary initiatives

- > Defining public policies & strategies
- > Regulations
- > Inventories & carbon footprint
- > Roadmap for neutral emissions, emission compensation systems, etc.
- > Studies & projects for adapting to climate change
- > Energy consultancy, services & technologies



Our Cleantech consultancy to take part in carbon trading

- > Portfolio management
- > Intermediation in selling & buying transactions
- > Feasibility & project management for reducing emissions (Clean Development Mechanism, Joint Application & domestic projects)
- > Formalities
- > Plus ...



Climate change

Project gallery
CLEANTECH



Tools for mitigating climate change

Development of the method for calculating the carbon footprint and its calculation for Bangchak Petroleum Company, Thailand

The project's aim is to consolidate the ability of Bangchak Petroleum Company to help plan, implement and achieve a carbon neutral business model. To do so, Factor CO₂ provides technical assistance to Bangchak Petroleum Company through the following:

- > Development of a follow up system for CO₂ emissions.
 - > Staff training in the application of the carbon footprint strategy.
 - > Product life cycle carbon evaluations.
 - > Development of a carbon investment plan. Creation of a simulation model to evaluate new products and investments with regard to greenhouse gas emissions.
 - > Establishment of a "business as usual" reference line for greenhouse gas emissions.
 - > Dissemination of strategies for reducing, identifying and following up, thanks to specific workshops held on the subject.
- [FACTOR CO₂]



Mitigation

Carbon footprint calculation according to ISO 14064

Pilot project to draw up and check GEI inventories according to standard ISO 14064:1 in 11 state-run and private organisations in the Basque Country, including the City of Donostia-San Sebastián.

[IHOBE, IDOM]



Adaptation

Preventing torrential rain

Ibermática & UPNA manage to predict torrential rain using GPS and Artificial Intelligence, by measuring water vapour in the atmosphere.

[IBERMÁTICA]



Mitigation

Forest and marine CO2 compensation

Voluntary programme in which the companies of a municipality economically contribute to the sustainable use of municipal drains (forest/aquatic mass) by paying an annual fee based on the market price of CO₂.

[INSTITUTO HUELLA DE CARBONO]



Information & awareness

Stop CO2 Euskadi

Open initiative with real compromise to reduce greenhouse gas emissions by different parts of Basque society (citizens, business and government).

[Basque Government-IHOBE]



Adaptation

Adapting to CC

K-Egokitzen is a project focussing on developing strategies, plans and specific measures to adapt water resources to climate change, as well as coastal waters, urban areas, infrastructures, land and marine ecosystems, farming & forest resources and fishing resources in the Basque Country by evaluating their vulnerability.

[TECNALIA, AZTI-Tecnalia, NEIKER-Tecnalia, University of the Basque Country]

Waste

Profile & capacity
CLEANTECH

About us

We are an association of companies and entities specialised in the integral management of all types of waste, throughout the different stages of the value chain

Value chain

Feasibility, studies, projects	R+D+i/ Technology centres IK4, TECNALIA		Clusters ACLIMA / Energy Cluster	
	Engineering firms & Consultancies CIMAS, DINAM, EKOTEK, EPTISA, IDEMA, IDOM, INGEINNOVA, INGURU, KIMIKER, LIMIA&MARTIN, MIRANDAOLA, ONDOAN, SENER, SYNERTECH, TRADEBE			Government agencies Environment: IHOBE / Energy: EVE / Business development: SPRI
Construction, assembly, operating, maintenance	Integral turnkey solutions BEFESA, CESPA, COBRA, ELECNOR, EPTISA, IDOM-SERIDOM		Government Basque Government / Provincial Councils (Alava, Biscay & Gipuzkoa)	
	Specific solutions & supplies/ Biogas & syngas engines GUASCOR/ Elimination solutions and dumping sites DINAM / Breeding waste treatment GUASCOR / Agricultural waste treatment & sludge IBERESE			Chambers of Commerce Chambers of Commerce (Alava, Bilbao & Gipuzkoa)
	ICTs IBERMÁTICA, INDRA, OPTIMITIVE			Universities Deusto / Mondragon / Navarre / University of the Basque Country
	Hazardous & non hazardous waste managers ACIDEKA, AFESA, ARCELOR MITTAL, BEFESA, CEGASA-CEGA LOGISICTs, CEMENTOS LEMONA, EKONOR, ELMET, FYM-CEMENTOS REZOLA, INDUMETAL RECYCLING, INTERENVASES, IRAGAZ WATIN, LANTEGI BATUAK-HONDATA, MAIER-MAGER, NV RECYCLING, RAFRINOR, RECYPLAS, SADER, SERCONTROL, SOGECAR, STS Tank Cleaning Services, TRADEBE, TRIENEKENS, VASCONTAINER, ZABALGARBI			
	Specific services / Urban waste collection & highway cleaning CESPA, GMSM Medio Ambiente, INBISA Servicios y Medio Ambiente, SERBITZU ELKARTEA / Emergency response AFESA, EKONOR / Equipment cleaning LANTEGI BATUAK Industrial cleaning EKONOR, INBISA Servicios y Medio Ambiente, IRAGAZ WATIN			
Other services/ Public relations ICG2025/ Inspection, control, certification EUROCONTROL/ Laboratories ADIRONDACK, IK4, TECNALIA / Promotion of new companies SAIOLAN / Legal services MAS ABOGADOS				

What we do

We help avoid the generation of waste, the recovery of materials and waste energy whose generation cannot be avoided, and safely dispose of waste which cannot be recovered

Our field of work

According to type

Urban waste	Industrial & hazardous waste
Building & demolition waste	Special waste

According to stage

Collection & transport	Transfer
Reuse	Elimination

Our focus



Our Cleantech solutions to PREVENT the generation of waste

- > Waste planning
- > Sorting at source
- > Logistic solutions
- > Listed equipment & processes like specific best available techniques for productive sectors.
- > Plus...

Our Cleantech solutions REUSE waste

- > Mechanical & biological treatments
- > Recycling
- > New materials from waste
- > Waste to energy: renewable energy from biomass, recovered solid fuel, landfill gas; gasification, plasma, etc.
- > Plus...

Waste

Gallery of projects
CLEANTECH



Energy recovery from waste

Zabalgarbi, urban waste recovery plant in Bilbao

SENER has designed and patented a large number of innovations aimed at increasing the efficiency of energy recovery from urban waste. The first application of these advanced solutions was the at the ZABALGARBI plant, where urban waste collected in the city of Bilbao and the surrounding urban area is recovered. The plant is a model in environmental operating terms, uses thermodynamic cycle SENER-2, with high energy efficiency and which minimises problems of corrosion, which are very frequent in conventional plants. ZABALGARBI processes 225,000 tons of waste per year and generates 93 Mwe of electricity.

[ZABALGARBI/SENER]



Planning instruments

Legal and institutional consolidation instruments to support waste planning

Definition of the Public Urban Waste Integral Management Public Entity, and legal and technical consultancy for the creation of the Gipuzkoa Urban Waste Consortium.

[MAS ABOGADOS]



Gasification

Gasification of waste in Hawaii

8.5 MW generation plant using gasification technology applied to tyres, hospital waste, and building and demolition waste. The plant is being built on the Campbell Industrial Estate on the island of O'ahu in Hawaii, USA.

[IDOM]



Recovery of landfill biogas

Microphilox

Internationally awarded LIFE project with the installation of the first microturbine working with landfill biogas. The system also enables SH₂ (corrosive) and siloxanes to be biologically eliminated in the biogas.

[CESPA]



Aluminium recycling

Scrap aluminium & saline slag recycling plants

Befesa operates various plants where aluminium contained in different waste and scrap produces secondary aluminium alloys for the car and building industries.

[BEFESA ENVIRONMENT]



Electrical and electronic waste recycling

Advanced solutions for recycling electrical and electronic waste recycling

Indumetal uses its own technology to decontaminate recycled materials and components from electrical and electronic waste: iron, aluminium, copper concentrates with precious metals, plastics and glass.

[INDUMETAL RECYCLING]

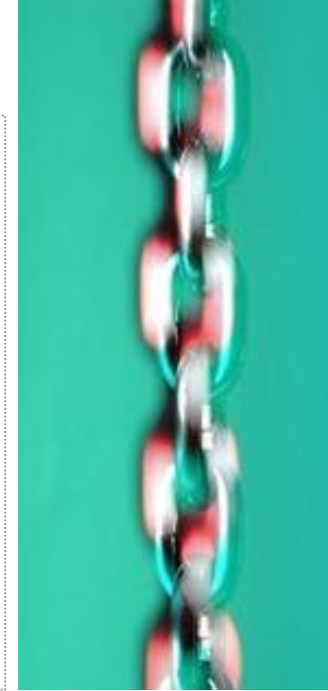
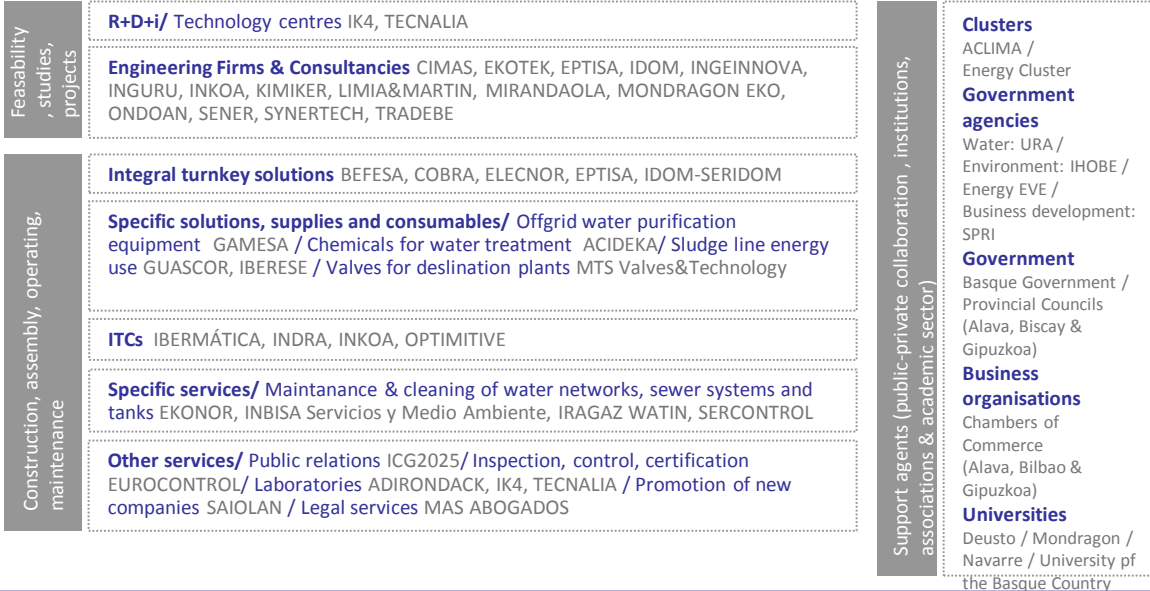
Water

Profile & abilities
CLEANTECH

About us

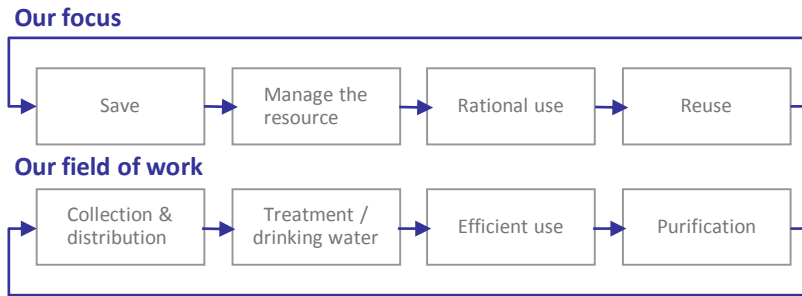
We are a group of companies and entities which provide integral Cleantech solutions throughout the water and waste water sector value chain

Value chain



What we do

We contribute to saving water, using it efficiently, re-using it and purifying waste water, developing and using Clean Technologies



Our Cleantech solutions to preserve water resources

- > Application of ICTs in water management systems
- > Smart meters
- > Operational optimisation of treatment systems
- > Ecodesign of goods & services which require water
- > Regeneration & reuse systems
- > Plus ...

Our Cleantech solutions to improve the quality of water

- > Water & waste water treatment plants, on any scale and for any use (urban/farming/industrial), including Clean Technologies (osmosis, filtering, ultra filtering, etc.).
- > Cleantech solutions for the sewer line, including anaerobic digestion & thermal treatments.
- > Plus ...



Water

Project gallery
CLEANTECH



Waste water treatment & environmental regeneration

Environmental regeneration of the Nervión River in the Metropolitan Bilbao area

The Bilbao Estuary integral cleaning project as it passes through the Metropolitan Bilbao area was implemented by the consortium de Aguas in which a large number of companies included in this catalogue took part.

Its result was the environmental regeneration of the river bed and the surroundings in one of Europe's most polluted urban river sections.

The river has now recovered its natural life, landscape and social use of the surrounding area.

This successful experiment is a world renowned reference in urban and industrial polluted river regeneration.



R+D+i

Improved yield & life cycle of membranes

This involves improving advanced biological urban waste water treatment systems, increasing the ability to avoid membrane fouling, thus improving their yield and life cycle.

[GAIKER-1K4]



Desalination

Desalination plant in Ghana

Sea water reverse osmosis desalination plant with a capacity of 60,000 m³/day, located close to Accra (capital of Ghana). The plant will supply 350,000 inhabitants with drinking water.

[BEFESA ENVIRONMENT, IDOM]



Environmental sensors

Hydrological & environmental sensors in the Ebro Delta

Environmental sensor system to measure in real time the hydrological and water quality conditions and variables in the Ebro Delta (Natural Park).

[INDRA]



Purification

EDAR Galindo, Bilbao

EDAR which provides services to the Metropolitan Bilbao area, created for the equivalent of over 1 million inhabitants.

Ecnor & Iberese took part in the building of the sludge reduction and reuse system.

[consortium DE AGUAS, ELECINOR, IBERESE]



Hydrological planning

Hydrological plan

Hydrological plan for the Basque Country's internal riverbeds, their strategic environmental evaluation and drafting the programme of measures

[URA-UR AGENTZIA, INGURU]

Soils

Profile & abilities
CLEANTECH

About us

We are an association of companies and entities specialised in integral soil and contaminated soil management. We accredited according to international standards.

Value chain

Feasibility, studies, projects	R+D+i/ Technology Centres IK4, TECNALIA / Others INKOA	Support agents (public-private collaboration, institutions, associations & academic sector)	Clusters ACLIMA / Energy Cluster
	Engineering Firms & Consulancies WITH ISO 17.020 ACCREDITATION / Research into soil quality, risk analysis, environmental follow up for remediation & post-remediation AFESA, DINAM, EKONOR, EPTISA Cinsa, IDEMA, IDOM, INGURU, LIMIA&MARTIN, MIRANDAOLA, ONDOAN		Government agencies Environment: IHOBE / Business development: SPRI
Building, assembly, operating, maintenance	Entities WITH ISO 17.020 ACCREDITATION / Technological solutions for remediation in situ, on site, off site (retaining, biorremediation, thermal desorption, etc AFESA, BEFESA, DINAM, EKONOR, IDOM		Government Basque Government / Provincial Councils (Álava, Biscay & Gipzukoia)
	Other treatments / Material & energy recovery in cement kiln CEMENTOS LEMONA, FYM-CEMENTOS REZOLA / Lansfill deposit DINAM, VASCONTAINER		Professional organisations Chambers of Commerce (Álava, Bilbao & Gipzukoia)
	Consumables / Binder to render inert and stabilise contaminated land CEMENTOS LEMONA		Universities Deusto / Mondragon / Navarre / University of the Basque Country
	Specific services / Public management of land & accommodation ORUBIDE / Pesticides in crops INKOA / Emergency response AFESA, EKONOR / Surveys EPTISA Cinsa		
	Other services / Public relations ICG2025 / Laboratories ADIRONDACK, IK4, TECNALIA / Promotion of new companies SAIOLAN / Legal services MAS ABOGADOS		



What we do

We help to avoid land contamination, we investigate its quality, analyse risks created by its contamination, we provide solutions for contaminated soils and sediments, and also dismantle and provide integral management for industrial ruins, with all the guarantees for the health of people and the environment.

Our services' guarantees

International accreditation as soil research and recovery entities UNE/EN/ISO 17.020	
Guarantee for human health	Guarantees for the environment
Mediation & consensus (population & stakeholders)	Generation of added value Economic feasibility



Our CLEANTECH solutions to PREVENT pollution and DETERMINE soil quality

- > Listed equipment & processes like specific best available techniques for productive sectors
- > Tools to identify points of pollution
- > Risk analysis
- > Models of soil & underground water pollution dispersion
- > Plus ...



Our CLEANTECH solutions to REMEDY land pollution and REUSE land

- > New decontamination technologies, on site, in situ & off site (confinment, landfarming, biocells, soil mixing, air sparging, thermal desorption, applied nanotechnology, etc.)
- > New strategies for land reuse
- > Selective demolition of industrial ruins
- > Plus...

Our focus



Soils

Project gallery
CLEANTECH



Brownfields regeneration

Integral urban regeneration actions in the bay of Pasaia

Integral regeneration of a bay affected by the Port of Pasaje's industrial activity and accelerated, dense and disorderly urban development. The action envisages transferring the port's activity outside the bay, which would free up port land, open up adjoining urban centres to the sea and reduce barriers created by infrastructures and the topography. Freed land was examined and remedied with the aim of returning it to the urban and property circuit with a full guarantee for human health and the environment.

[PORT OF PASAJES, IHOBE;

EPTISA Cinsa, IDOM, IRAGAZ-CAMPEZO GROUP]



Examining polluted soils

Investigating historic liabilities in the Mining Area

Preliminary detailed investigation, and risk analysis of potentially polluted land in various different plots in Biscay's historic mining areas (Mina Acrisolada, Mina del Morro, etc.)

[IDEMA]



Regeneration of brownfields

Urban regeneration in Bolueta (Bilbao)

Urban and environmental recovery in an area occupied by the industrial ruin of Fundiciones Bolueta in Bilbao, to reincorporate the site into the property circuit, building 1,100 flats. This is the Basque Country's largest public private initiative land cleaning operation. [ORUBIDE, IDOM]



Remediation technologies

Biorremediation with composting

Biorremediation of polluted land based on the use of specifically designed compost. Reuse of waste in the remediation process. LIFE Environment project.

[INKOA Systems, GAIKER-IK4]



Studies prior to the planning and the public management of polluted land

Inventory of excavated land & potential uses

Detailed study of land movements and directives for determining their possible use in the Basque Country.

[IHOBE, CIMAS, DINAM, LIMIA & MARTIN]



Regeneration of brownfields

Urban regeneration in Barakaldo (Urban Galindo)

Urban and environmental recovery of land once used by heavy industry in the municipality of Barakaldo, to be reincorporated into the property circuit (residential, commercial & leisure use).

[CEMENTOS LEMONA, EPTISA Cinsa, IHOBE]

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**Спасибо
Thank you**

www.aclima.net

