

Environmental Services

- Aluminium waste, salt cake and zinc waste recycling; industrial waste management; industrial cleaning services; environmental engineering (water treatment and waste management engineering and construction)

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Environmental Services

Befesa Medio Ambiente

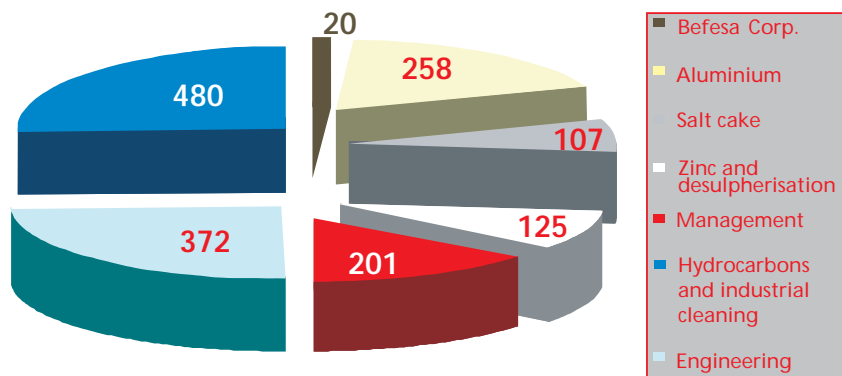
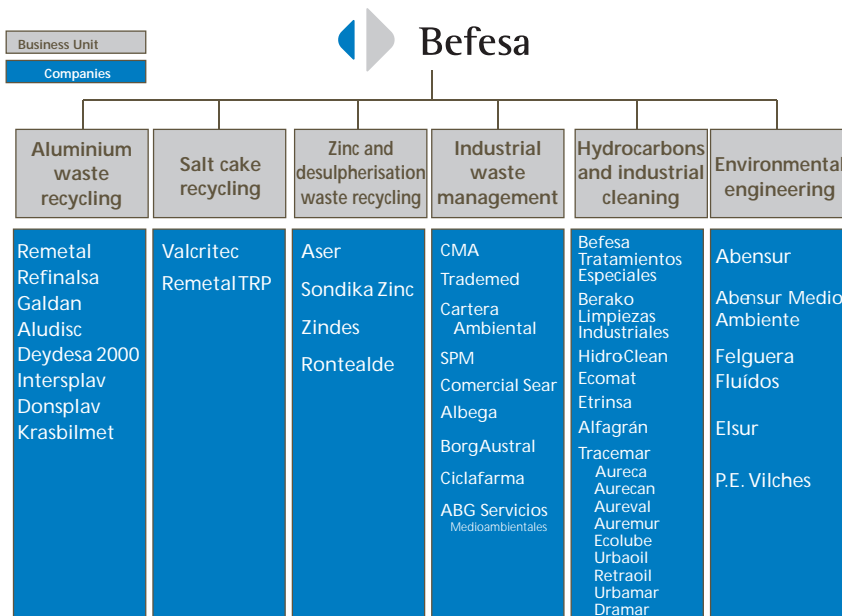
The process completed in 2001 to fully integrate all Abengoa's environmental activities in Befesa, strengthening the company substantially, was followed in 2002 by a series of important acquisitions. These, together with rapid internal expansion, have contributed to improving our market position.

Great effort has gone into setting up the corporate structure and organisation best suited to each business area, with a view to building up a strong position in a market that continues to be characterised by rapid growth and consolidation.

There was an important change in the company's shareholding structure in 2002, when Nefinsa acquired a 4.88% ownership interest in Befesa through its subsidiary Terraire.

The worsening economic situation affected the environmental sector, which saw a widespread fall in demand and lower prices for certain recycled products in 2002. In spite of these adverse developments, our environmental business unit performed well, and Befesa succeeded in strengthening its leadership position in the Spanish industrial waste treatment market.

In environmental engineering, the implementation of the National Hydrological Plan and the National Irrigation Plan resulted in heavy investment in infrastructure in 2002. The companies operating in this area of business therefore performed well in 2002 and have a healthy forward order book, ensuring good prospects for coming years.



Total: 1,563 employees (31.12.2002)

Average workforce	
Managers	71
Graduates and technicians	292
Administration	140
Manual	875
Total	1,378
(excluding Intersplav)	

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Areas of business

Aluminium waste recycling

Befesa is the leading Spanish operator in integrated aluminium waste and scrap recovery and secondary aluminium alloy production. It is also the biggest operator in the aluminium waste recycling sector in Europe.

The trends observed in the latter part of 2001– a sharp fall in prices and significantly lower demand– continued into 2002, making it a difficult year for businesses operating in the secondary aluminium sector. In spite of this, our subsidiaries in this sector performed well.

The Befesa companies operating in the sector treated some 158,000 tonnes of aluminium waste, confirming an irrefutable leadership position in Spain.

Salt cake recycling

Salt cake is a highly toxic waste produced during the aluminium waste recycling process. This salt cake must also be recycled in order to complete the recycling process and ensure full reuse of waste containing aluminium. This activity can then be considered one that generates zero waste.

Befesa is the only company in Spain with the facilities and expertise required to provide integrated aluminium recycling services.

Befesa currently operates the only salt cake recycling plant in Spain incorporating in-house technology. It has the capacity to treat over 100,000 tonnes of salt cake and can therefore recycle all such waste generated in Spain.



In 2002 Befesa also improved the performance of its UK plant, the first and only facility of its kind existing in that country. With the capacity to treat 70,000 tonnes of waste a year, it can recycle all the salt cake produced in the UK.

Over the year, more than 144,000 tonnes of salt cake were treated, 6% up on the previous year.

Zinc and desulpherisation waste recycling

This was also an exceptionally difficult year for companies in the zinc business. Zinc prices fell sharply to the lowest level in twenty years, a downward trend, which began in 2001 and continued to eat away at profit margins in 2002.

In spite of this adverse scenario, our companies once again demonstrated that the strong strategic position they have built up in the Spanish market gives them an advantage over other zinc waste recyclers. The ability of our companies to adapt and innovate enabled them to achieve financial results that can only be termed exceptional.



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Befesa is the only Spanish company that provides integrated steel EAF dust collection and treatment services.

The most important developments of the year include the following:

- A long-term agreement with Basque iron and steel works, as a result of which nearly all the steel plant dust it treats is generated nationally.
- Changes introduced in the production process, leading to a significant increase in treatment capacity.
- Significant improvements to production facilities.

Befesa treated almost 217,000 tonnes of zinc and desulphurisation waste in 2002, resulting in the production of almost 355,000 tonnes of marketable products.

Industrial waste management

Spain still lags behind many European countries in terms of the volume of industrial waste managed nationally. However, continuing the trend of recent years, Spain is narrowing the gap with its European neighbours, which means that this sector is experiencing very rapid growth.

In the area of industrial waste management, efforts are centred on providing integrated environmental services for industry, based on a firm commitment to industrial waste recycling and reuse. We have built up a strong position as a final waste manager and operate in all the main geographic areas.

Our state-of-the-art facilities include waste transfer stations, three environmental facilities providing physico-chemical waste treatment and intertisation, and two disposal sites for both hazardous and non-hazardous waste, making Befesa one of the national leaders in integrated industrial waste management.

With the expertise and experience of a highly qualified professional team, Befesa provides management, logistic, transport, conditioning and prior storage services for a whole range of industrial waste produced by a variety of customers, including both multinationals and small- and medium-sized businesses, which in certain areas of Spain represent an important part of the industrial fabric.

With a view to offering our customers optimal, integrated solutions, Befesa has continued to modernise and extend its facilities. It has also made numerous acquisitions to strengthen its leadership position nationwide in hazardous waste management.



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These include, among others:

- Acquisition of 100 % of Logística y Control, a waste transfer station in Alovera (Guadalajara).
- Acquisition of 100% of Comercial Sear, a waste transfer station in Zaragoza.
- Acquisition of 100% of Tría and Progesa, environmental consultancies in Catalonia.
- Formation of the company Albega (Alianza Befesa Egmasa) in which Befesa and Egmasa each have a 50% shareholding, for the operation of the inertisation plant in Palos de la Frontera (Huelva).
- Increase of its shareholding in CMA to 100%.

As part of its ongoing commercial drive and coordination efforts aimed at maintaining its leadership position in this market and preparing to meet future challenges, Befesa has initiated a process to merge all the companies operating in this area of business under the trademark Befesa GRI. The unification of the sales force according to standard criteria, service improvement and increased efficiency will enable us to continue to provide our customers with better services under a single trademark.

The initial results of these efforts have been greater competitiveness and a 47% increase in the total volume of industrial waste managed in 2002 to 410,000 tonnes.

Our waste transfer stations and physico-chemical and inertisation facilities have managed and treated 98,000 tonnes of waste, up 44% on the previous year's figure.

Hydrocarbons and industrial cleaning services

Tracemar commenced operations last year and has built up its position as a leading company in the collection, treatment, recovery and regeneration of used oil and Marpol waste in Spain. It operates over 90 vehicles, which collected 135,000 tonnes of oily waste in 2002, 15 waste transfer and storage stations and eight oil waste treatment, recycling and regeneration facilities, four of which have power



generating systems, which are used to power the plants, with excess electricity being exported to the grid.

Tracemar has also promoted the collection of other types of industrial waste as a supplementary service offered to auto garages.

An important development in 2002 was the acquisition of 70% of the companies Berako, S.A., Hidro-Clean, S.A., Hidro Limp, S.A. and Ecomat, S.A. These companies provide highly specialised industrial cleaning services incorporating a high level of technological expertise for sectors such as the petrochemical industry, the iron and steel industry and the energy industry. They also provide crude oil tank cleaning services nationwide and in various European countries using an innovative automatic cleaning process.

With both permanent and mobile facilities, the Berako Group is one of the leading organisations in the sector and has an extensive customer base, including large and medium-sized companies, as well as institutions and local authorities.

These acquisitions have put Befesa in a leadership position in the refinery and industrial cleaning sector nationally and have strengthened its business base in a sector with very promising growth prospects.



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Through Compañía Unión Química Naval e Industrial (Unquinaval), Befesa also operates in the area of petroleum waste treatment and tank cleaning and repair.

The need for a major reorganisation of this business unit arose as a result of rapid growth and numerous acquisitions in recent years, combined with the extension of service offerings, good financial results and the demands on it to meet ambitious challenges in the future both in Spain and abroad.

The organisation of this business unit was therefore restructured at the beginning of 2003. As a result, the company Befesa Tratamientos Especiales (formerly Unquinaval) will promote activities in the area of soil decontamination and waste treatment and management using mobile facilities. Plans for the future include the expansion of all activities into foreign markets.

The company Hidro-Clean will specialise in automated cleaning (SALT) for large crude and fuel oil tanks to strengthen its position in Spain and Portugal and to expand into Europe and Latin America.

Prior to the reorganisation, this company had been carrying out industrial cleaning and dust extraction activities, which have been transferred to Berako Limpiezas Industriales, a company that groups together all the activities formerly carried out by Hidro-Limp, Berako and Berako Equipos Especiales: industrial, hydrodynamic and chemical cleaning, dust extraction and the removal and replacement of catalysers.

At other facilities, Befesa recycles most of the greenhouse covering waste produced in Spain through Alfagrán and provides an effective solution for PCB contaminated equipment through Etrinsa.



Environmental engineering

Befesa Group environmental engineering operations are implemented through the companies Abensur, Abensur Medio Ambiente and Felguera Fluidos.

In an increasingly dynamic market, Abensur has continued to expand, achieving high levels of market penetration, with a track record that proves that it is highly competitive and successful in implementing effective, integrated technical solutions.

Growing concern for environmental issues and sustainable growth has had a direct effect on this market. Civil engineering infrastructures are giving way to projects which have less of an impact on the environment, such as treated water reuse, the replacement of traditional gravity irrigation with pressurised sprinkler or drip irrigation, etc.

The desalination of seawater and brackish water is an important alternative source of water that can be used to supply households, providing an additional guarantee beyond traditional surface and groundwater resources. In 2002 we participated in various national and international fora on desalination.



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Continuing the trend of recent years, in the water market there was an increase in the volume of tenders put out by the Ministry of the Environment, our main customer, the state-owned hydrographical companies, the Ministry of Agriculture through the state-owned infrastructure companies responsible for investment in modernising irrigation systems, and the rest of the public sector. The regional governments and city councils are currently undertaking major investments in urban sewer systems and wastewater treatment works, which must be completed by 2005 in compliance with EU directive 91/271.

The implementation of the National Hydrological Plan, including the Ebro water transfer to Catalonia and the Mediterranean Levante, and the National Irrigation Plan have given renewed impetus to the hydraulic sector, one of Abengoa's traditional areas of business.

The most significant contracts won in 2002 include, in the area of irrigation, the replacement of the Comunidad de Regantes de Villarreal's traditional irrigation system with localised irrigation (Castellón) for Seiasa de la Meseta Sur and the extension of the main pumping station of the irrigation area on the northwestern coast of Cadiz to a capacity of 9.2 m³/s and 10 MVA for the Guadalquivir Hydrographical Confederation. In the area of water treatment, it has won a contract to provide tertiary treatment facilities to purify the effluent of the Tarrasa wastewater treatment plant (Barcelona), so that it can be used to irrigate the new golf course of the El Prat Real Club de Golf.

Projects carried out abroad include the 500 l/s drinking water supply system for the municipality of Loja (Ecuador). The 8420 m³ a day wastewater treatment plant serving the towns of Buin Oriente, Linderos, Paine and Alto Jahuel has been completed for EMOS, the Metropolitan Wastewater Company of Santiago, Chile.

Significant projects in 2002 include:

- Replacement of the traditional irrigation system with a 1250 h localised system in the Villarreal irrigation area (Castellón), including: regulating pond, pumping station, automatic fertilizing system, conveyance networks, remote control system and management building for Seiasa de la Meseta Sur.
- Uptake, 39 km conveyance system and a water purification plant capable of handling 500 l/s, extendable to 1000 l/s, for a population of 175,000 inhabitants in the municipality of Loja (Ecuador).
- Tijola 6000 KVA and Los Manueles 3150 KVA hydroelectric power stations, equipped with Pelton turbines, installed on the gravity feed section of the Negratín-Almanzora transfer (Almería) for Abensur.
- Pressurisation for the Negratín reservoir (Granada) of the Negratín-Almanzora water transfer with a



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nominal flow rate of 2 m³/s at 421 m and 5445 m long, constructed with varying diameters and materials for Acusur.

- Reverse osmosis seawater desalination plant with an output of up to 65,000 m³ a day to supply the towns of the Campo de Cartagena (province of Murcia) for the Spanish Environment Ministry.
- Reverse osmosis seawater desalination plant for Acusur with an output of up to 120,000 m³ a day (largest desalination plant in Europe), providing irrigation water for the Campo de Nijar in Carboneras (province of Almería).
- Desalination plant in El Atabal for Acusur to convert the brackish water from the Guadalteba-Guadalhorce, Viñuela and Limonero reservoirs and from the aquifer on which it is built, with salinity ranging between 6500 mg/l and 850 mg/l. It can handle up to 165,000 m³ a day and provides the water supply for Malaga.
- Wastewater treatment plant for Villarejo de Salvanés, Fuentidueña de Tajo, Estremera, Brea de Tajo and Villamanrique de Tajo, serving a population of 33,000, included as part XIII of the region of Madrid's 100% Water Treatment Plan with prolonged aeration technology for Canal de Isabel II.
- Extension of the Barranco Seco II wastewater treatment plant (Las Palmas) for the Spanish Environment Ministry, serving a population of 245,000. It uses tertiary treatments including electro dialysis reversal (EDR) and ultrafiltration to provide 26,000 m³ of water a day for irrigation purposes.

Abensur Medio Ambiente continued its work as the company responsible for the environmental engineering, development and construction required in Befesa's industrial waste treatment projects. Based on its expertise in the industrial waste sector and in response to new challenges arising from the implementation of strict EU environmental policies and the need for sustainable development, it provides Befesa's companies with technical assistance for the promotion of corporate



development projects both in Spain and Latin America.

It has also continued to construct urban solid waste treatment plants. The operation of such facilities and slurry treatment plants is an activity that it has extended and reinforced.

Felguera Fluidos is a company that designs and constructs plants to treat industrial wastewater and process water and to purify the wastewater from a variety of industries.



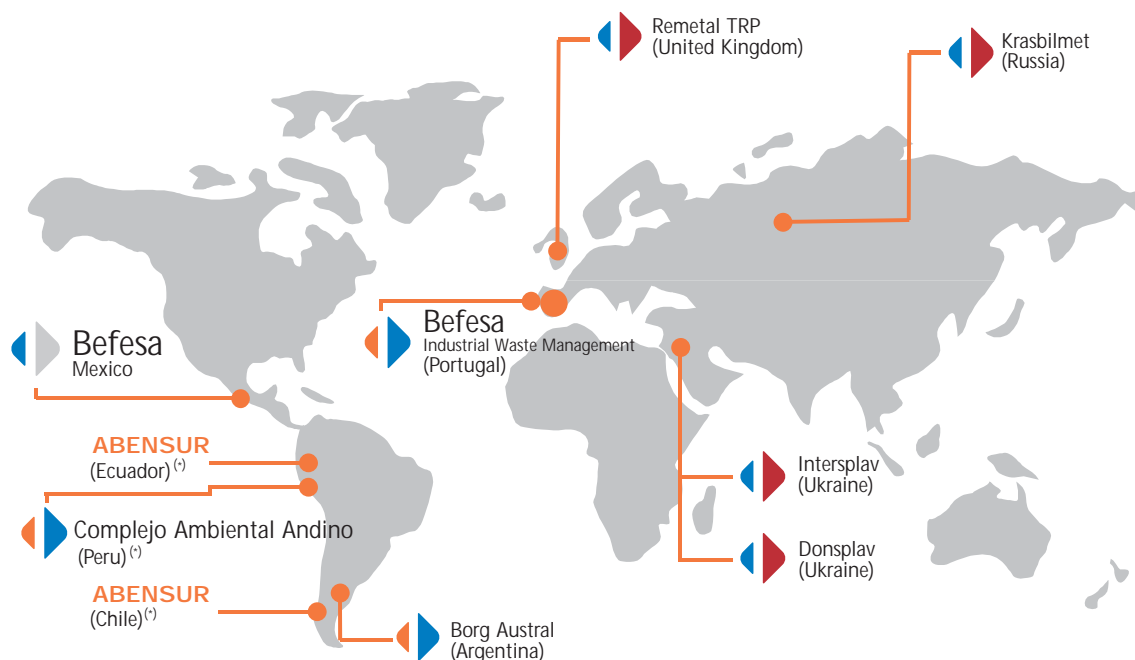
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It continued to win and perform contracts for projects at combined-cycle power stations in Spain and abroad. It provided process and wastewater treatment at the El Sauz combined-cycle power station in Mexico, with the use of state-of-the-art evaporation and demineralisation technology based on reverse osmosis. It also carried out a similar project at the Castejón thermal power station (Navarre) for Hidroeléctrica del Cantábrico.

In the area of disposal-site and biomethanisation leachate treatment, Felguera Fluidos constructed the Pinto biomethanisation treatment plant (50,000 m3/year) and has been awarded the contract for a leachate treatment plant in Malaga (70,000 m3/year).

In the steel industry sector, Felguera Fluidos delivered several water treatment units for Aceralia, enabling it to maintain its irrefutable leadership position. It has opened up a new area of activity in the chemical sector, with the construction of a new biological sludge treatment plant for Interquisa-Cepsa. Significant progress has been made in the treatment of wastewater from olive preparation and packaging factories, with successful testing performed at Aceitunas del Guadalquivir and Aceitunas Camacho in Morón de la Frontera (province of Seville), two of the biggest olive companies. A wastewater treatment plant was constructed and commissioned for Bioetanol Galicia, with a combination physico-chemical and biological process to treat an annual flow rate of 100,000 m3 of highly contaminated wastewater, achieving an efficiency level of over 95%.

Presence of the Group around the world



(*) matters in execution