# Industrial Engineering and Construction

Abeinsa is Abengoa's holding company for this Business Unit, whose activity focuses on engineering, construction and maintenance of electric, mechanical and instrumentation infrastructures for the energy, industry, transport and services sectors: Promotion, construction and operation of industrial and conventional (cogeneration and combined cycle) power plants, and renewable energy (bioethanol, biodiesel, biomass, wind, solar and geothermal) power plants. Turnkey telecommunication networks and projects.

With engineering... we construct and operate conventional and renewable energy power plants, power transmission systems and industrial infrastructures

## Leader in Spain and Latin America

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For Abengoa's Industrial Engineering and Construction Business Unit, the year 2005 saw it consolidate the growth process it initiated in previous financial years. This growth, based on compliance with the basic pillars of our strategy plan: customer satisfaction, internationalization, innovation, human resource development, and social involvement, ensures that we will be able, in the future, to provide our customers with the best possible service while maintaining our current growth and profitability level.

In developing our activity, we offer our customers integrated solutions in the Energy, Transport, Telecommunications, Industry, Services and Environment sectors. These solutions are always focused on sustainable development, which enables the creation of value for Abengoa, our customers and employees, while also ensuring the profitability of our businesses and our international projection and future.

During the year, we kept our commitment to the environment and developed a wide range of activities related to fuel cells and hydrogen and $CO_2$ capturing.

In the hydrogen and fuel cell sector, Hynergreen Technologies, a subsidiary dedicated to the production of electricity utilizing fuel cells and hydrogen, became a member of the Advisory Board of the European Hydrogen and Fuel Cell Technology Platform created by the European Commission and, in 2005, began to develop, together with the Energy and Environment and Technology Research Center (Ciemat), a project to produce clean and renewable hydrogen utilizing water and solar thermal energy.

As regards $CO_2$ capturing, we participated in the setting up of the Spanish Technological Platform for the reduction, capturing, transportation and storage of $CO_2$, and we continue to participate very actively in different Work Groups.

In 2005, in addition to this growth in sustainable energies, important milestones in our traditional engineering activity were reached, and this enabled us to increase our prestige and capacity for executing major infrastructure projects on the home and international markets.

Of note among these achievements are:

The completion of the combined cycle increase to 230 MW of Hermosillo thermoelectric power plant (Mexico).

The completion of the turnkey financing, detailed design, construction, start-up and operation of the electricity supply system project for the city of San Jose (Costa Rica).

The acceptance by the Government of Mauritania of the oil storage depot in Nouakchott, with 60,000 cubic meter storage capacity for petroleum derived products.

The construction of Europe's largest bioethanol from grain production plant (200,000 $m^3$/year) in Salamanca and the pre-engineering works for a 180 million liter bioethanol plant in Lacq (France).

Our consolidation as an installer company in France through the 2004-2005 framework contract works for RTE.

This fulfillment of our commitments, together with many others, has met our customers' expectations upon us providing them with integrated solutions adapted to their needs.

This greater confidence and our internationalization strategy enabled us to obtain new contracts in 2005, of note among which are:

The construction of the 800 kV Sipat-Seoni transmission line for Power Grid, the scope of which includes the civil works, assembly and raising of towers, and the stringing of conductors.
The activity in North Africa developed greatly, with important contracts for MV/LV rural electrification; the reinforcing of 400 kV lines and the connection of 400 and 225 kV lines to Mediouna and Qualili substations, in Morocco; the construction of a 400 kV transmission line in Algeria; and the construction of four armored 400/200 kV GIS type substations (FS6 gas substation).
The construction and operation, under an administrative concession contract, of the Tajo Hospital in Aranjuez (Madrid), including all the associated services, with the exception of the clinic services.
The construction and operation, under an administrative concession contract, of three courthouse buildings in the province of Barcelona, in the municipalities of Olot, Cerdanyola, and Santa Coloma de Gramanet.
Construction of a 5 million liter bioethanol from biomass plant for Biocarburantes de Castilla y León.

In short, our strategy for the future is based on the correct development of the energy integrated product, the construction of Bioenergy plants, a strong and sustained growth in the higher value-added infrastructures, concessions, singular projects and installations activity and a greater degree of internationalization with the aim being to continue to offer our customers projects with a high degree of quality that meet their needs.
We here-below provide more detailed information on the main achievements during the year in the lines of business we operate in: Energy, Installations, Telecommunications, and Marketing and Ancillary Manufacturing.

## Energy

The activity in the energy sector focuses mainly on the promotion, construction and operation of industrial and conventional energy (cogeneration and combined-cycle) and renewable energy (bioethanol, biodiesel, biomass, solar and geothermal) power plants, and the exploitation of businesses and activities related with electricity production utilizing fuel cells.
In 2005, we consolidated our leading position in international markets such as that of Mexico where we commenced important construction works. We also expanded to new markets in Europe (France and Belgium).
Likewise, R&D&I activities continued in different fields of application such as fuel cell based systems and the production of renewable hydrogen.

### Abener Energía

2005 was a year in which Abener took on major project execution challenges. Work commenced on the execution of two new projects contracted in December 2004 with the Federal Electricity Commission (CFE): the construction of the 37.5 MW Baja California Sur II internal combustion power plant (Baja California Sur, Mexico), and the remodeling of the 187.5 MW Emilio Portes Gil thermal power plant (Tamaulipas, Mexico). In addition, the combined-cycle increase to 230 MW of Hermosillo thermal power plant (Sonora, Mexico) was completed.

In the solar thermal power plant sector, work continued on the construction of Europe's largest tower technology plant, total installed output 11 MW, located in Sanlúcar la Mayor (Seville, Spain). This project will be the first of its kind to be built on the continent of Europe for commercial operation and represents Abener's first project in the solar thermal power plant market. The construction of a second 20 MW solar thermal power plant with the same technology is due to begin in January 2006 on the same site. This line of solar thermal projects is backed by Abengoa's strategy plan for this technology, with the in-house promotion of 300 MW in new facilities.

In the industrial sector, construction continued on the bioethanol (alcohol produced for use as fuel through the fermentation of grain and subsequent distillation) plant, in Babilafuente (Salamanca, Spain) which, with an annual production of 200 million liters, will be Europe's largest and the third to be constructed by Abener in Spain. As regards new contracts, the company was awarded the contract to construct a 5-million liter per year capacity biomass bioethanol production plant next to the aforementioned Babilafuente plant.
In addition, of note are the new construction contracts that are currently at the pre-engineering and feasibility stages, such as the works for Noun's 230 MW combined-cycle plant in Antwerp, Belgium; the Abengoa Bioenergía 180-million liter bioethanol plant in Lacq, France, and the 200-million kilo biodiesel plant at Cepsa's Refinery in Algeciras, promoted jointly with Abengoa Bioenergía.

**Main Works**
**11 MW Solar Thermal Power Plant with tower technology, in Seville (Spain)**

Abener continues the turnkey construction of an 11 MW tower technology solar thermal power plant, the commencement of the commercial operation of which is scheduled for September 2006. This power plant is the first of its kind to be constructed in Europe for commercial operation.
The power plant consists of 624 heliostats, each with a 120 $m^2$ surface area, suitably arranged on a surface area known as the "solar field". They track the sun's position automatically and concentrate its rays on an aquotubular receiver situated on top of a 115-meter high tower in which steam is generated and driven to a turboalternator, where it expands and thus delivers 11 MW to the power transport network.

**37.5 MW Internal Combustion Engine Power Plant in Baja California Sur (Mexico).**

Abener began this project for the Federal Electricity Commission (CFE) in December 2004. It consists of the turnkey construction of the Baja California Sur II Internal Combustion Engine Power Plant, in the Municipal District of La Paz, in the State of Baja California Sur (Mexico). Provisional acceptance of the project is scheduled for January 2007.
The project consists of the design, supply, testing and commissioning of a total net capacity 37.5 MW (± 15%) internal combustion engine power plant. It also includes a 230 kV substation and the fuel and water supply systems. The process will consist of the burning of liquid fuel in an internal combustion engine, generating exhaust gases that will be transferred to a heat recovery boiler where steam will be generated to heat the fuel system. The power plant will be provided with a seawater evaporation system to produce distilled water to feed the heat recovery units and the closed cooling water circuits, the fire-fighting and general services systems.

**Remodeling of the 187.5 MW Emilio Portes Gil Thermal Power Plant (México).**

This project also commenced in December 2004. It comprises the remodeling of the Emilio Portes Gil Thermal Power Plant and is the first power plant remodeling project to be undertaken by Abener for the Federal Electricity Commission (CFE). The plant is located at kilometer point 68.5 on the Matamoros-Mazatlán road, in the city of Rio Bravo, State of Tamaulipas (Mexico). The plant will be brought into operation in July 2006.
The work comprises the modernization, supply, installation and construction of a heat recovery unit and its integration into combined-cycle together with its equipment and ancillary systems, and all the necessary conditioning works on the existing installations and systems for integral and dependable combined-cycle operation of the Plant's existing 150 MW gas turbine and 37.5 MW steam turbine.

**Combined-cycle increase to 230 MW of Hermosillo thermoelectric power plant (Mexico).**

This project is for the Federal Electricity Commission of Mexico and consists of converting the existing gas turbine unit to combined-cycle, adding a net output of 88 MW. It is the second repowering to combined-cycle to be executed by Abener in Mexico, following the provisional acceptance of the 450 MW El Sauz plant in December 2003.

Towards year-end 2005, the tests and start-up activities were satisfactorily completed.

**200 Ml Bioethanol from grain Production Plant in Salamanca (Spain).**

Construction works commenced back in November 2003, and the project is now at a very advanced stage, with commercial operation scheduled for the near future.
It is the third turnkey bioethanol (alcohol produced for use as fuel through the fermentation of grain and subsequent distillation) plant to be constructed by Abener in Spain, and Europe's largest capacity plant with annual production being 200,000 $m^3$/year.

**5 Ml Bioethanol from biomass Production Plant in Salamanca (Spain)**

It is on the same site as the aforementioned Salamanca bioethanol project. The novelty with this plant, which makes it the pioneer at industrial scale worldwide, lies in the bioethanol production process which utilizes lignocellulosic biomass to produce the fuel. The biomass to ethanol production process is achieved through pretreatment with diluted acid (sulfuric) and high-pressure steam, followed by cellulose enzymatic hydrolysis and subsequent fermentation of the freed sugars with commercially available yeasts.
The project will consume 50,400 tons of cereal straw per year to produce 5 million liters of bioethanol per year. With a 20-month construction period, its start-up and the carrying out of the performance tests is scheduled for early 2007.

**Project pre-engineering works**

During 2005, the pre-engineering works were contracted for the following projects in which Abener is opting for the turnkey construction thereof, once the feasibility study, license obtaining and owner financing stages have been completed.

- 20 MW tower technology Solar Thermal Power Plant in Seville (Spain).

Under Abengoa's strategy plan for solar thermal power plants, with more than 300 MW being promoted in Spain, a second 20 MW project of similar characteristics to the aforementioned Sanlúcar Solar plant will be constructed on a site next to that currently occupied by the 11 MW solar power plant.

- Combined-Cycle Cogeneration Plant for Noun in Antwerp (Belgium).

The Dutch company Noun has awarded Abener the pre-engineering contract for the 230 MW "Delta" Combined-Cycle Thermal Power Plant to be constructed in the port of the city of Antwerp (Belgium), alongside several chemical industries, who will purchase the new plant's electric and thermal energy for their industrial processes.

- 180-million liter Bioethanol Plant in Lacq (France).

A bioethanol from corn production plant that will consume 400,000 tons of corn per year to produce 180 million liters of bioethanol. This is Abener's first incursion in the French market, with a product for which Abener has the major references for plants built in Europe following its construction of the Ecocarburantes Cartagena, Bioetanol Galicia, and Bioetanol Castilla y Leon facilities.

- 200-million kilo Biodiesel Plant in Algeciras.

A biodiesel from crude oil production plant with production capacity for 200,000 tons per year of this biofuel. The project consolidates Abener as the main renewable fuels plant constructor as a consequence of its execution of the aforementioned bioethanol technology projects.

**Operation and Maintenance**

The Operation and Maintenance (O&M) line of business applied to generating plants includes preventive, scheduled and corrective maintenance of equipment and systems, as well as their operation to achieve dependability of facility operation and ensure the specified design performances in terms of output, availability and load factor.

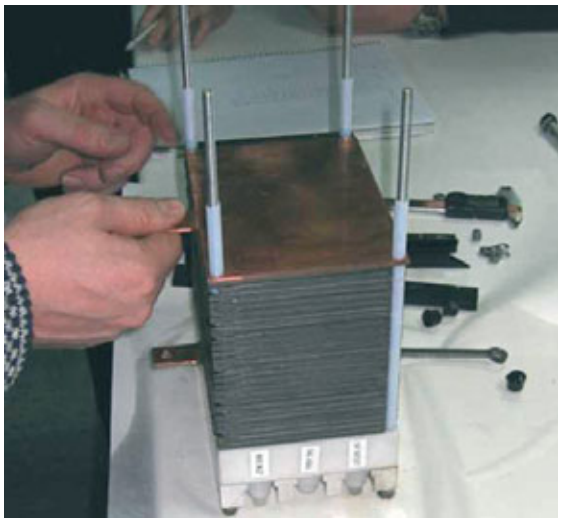
The O&M Division is carrying out these activities in seven different plants (four cogeneration plants and three gas strata generation plants), and it is also providing technical assistance for the O&M of a further cogeneration plant.
These plants are located in six provinces in three different Autonomous Regions. Their total installed output is 165 MW. In 2005, between them all they generated 1,032 GWh of electricity.
In addition, Abener manages the production and sale of electricity from six cogeneration plants which, in 2005, produced 1,402 GWh of electricity, 1,255 thousand tons of steam, 9.45 million cubic meters of hot water, and 266 thousand cubic meters of desalinated water.
Of special note is the fact that three of these plants sell their surplus energy in the electricity production market (the so-called electric "pool"). The management of the sale of this energy to maximize earnings according to the market rules, has been incorporated as another task to be carried out by the O&M Division which also provides these same services for two plants belonging to the Bioenergy Business Unit. The annual energy managed for these five facilities is 1,255 GWh.
At all these cogeneration plants, the greenhouse effect gas emission rights assigned to each facility were managed through the efficient economic operation of each of them. This, together with changes in operating regimes at some of the plants, enabled year-end to be reached with a positive balance between the assigned rights and the real emissions.

**Hynergreen**

Hynergreen is a company dedicated to the design, development and construction of electric energy production systems base on the application of fuel cells and hydrogen, and to the production, handling and storage of this gas as an energy vector.

To be specific, it focuses on developing systems that integrate fuel cells and hydrogen in the transport and portable sectors, in which in develops R&D projects and Works for the home and international markets. Overall, this is an ambitious plan that covers electric power ratings ranking between 30 W and 500 kW, utilizing high and low temperature fuel cells
These sectors could greatly benefit from the use of these technologies that, in addition to being more efficient, have other advantages such as low emissions of pollutants, higher energy density, modularity or low noise level.
Upon it being well aware of the need to pursue new clean energy sources, Hynergreen also participates in projects related with the production of hydrogen utilizing solar energy, and with the integration of nanotechnology and microtechnology.
In this sense, the hydrogen would act as a renewable energies storage system and would thus become a clean fuel that could be produced locally.
To attain its objectives, Hynergreen collaborates with public and private bodies and institutions, both Spanish and foreign, in different frameworks and programs, to combine synergies and achieve the best results.
Finally, it utilizes R&D&I Management Systems that allow it to offer customized solutions to its customers, with maximum flexibility and which are based on the latest advances made in these technologies, and it thereby contributes to a sustainable future.

Hynergreen is a member of the Board of Governors of the Spanish Hydrogen Association (AEH), occupies the Vice-chairmanship of the Spanish Fuel Cell Association (Appice), and is a member of Raitec, as a Technology Agent. In addition, it is a member of the Advisory Council of the European Hydrogen and Fuel Cell Technology Platform, and in this case it occupies the Chair.



**Installations**

This line of activity is led by the company Instalaciones Inabensa, S.A. and includes all the activities related with electrical, mechanical, instrumentation, large HV line, railway, maintenance, communications, and board and cabinet manufacturing activities, which have been the pioneering activities of Abengoa since 1941, as well as the installation of insulation, refractory and passive fire protection materials.
Of note is the fact that Inabensa is making a great effort in internationalization through its subsidiaries and permanent offices abroad (France, Morocco, India, Portugal, Romania, Libya, United Arab Emirates, and Costa Rica).

**Inabensa**

In 2005, Inabensa recorded an important advance in its diversification program, from both a product level and activity internationalization point of view, with these being the basic pillars of its growth strategy. In addition, these factors contributed greatly once again to it meeting its objectives.
On the one hand, the awarding of two new projects via administrative concession contracts reinforce the effective management the company has been developing in this new sector which requires the making of a very great effort, from the point of view of investment, organization and knowledge of the different disciplines involved in these types of projects.
On the other hand, Inabensa increased its presence in the international markets by adding the permanent office in Abu Dhabi to the other permanent offices that are already operating or subsidiary companies it has established. This has enabled the company to approach an important market such as that of the Persian Gulf. New contracts it was awarded in its traditional foreign markets represented slightly more than 30% of the annual contracting figure.
The contracting figure was approximately 400 million euro, and the Company's works portfolio at year-end had increased 36.5% on the previous year. Likewise, its earnings after tax increased 9% on the previous year's figure.
In addition, Inabensa continued its constant occupational training program for management and technical and administrative personnel. Some 40,000 hours were dedicated to training throughout the year with a view to providing employees with the know-how required to increase productivity, a key component of our growth.
The company maintained its commitment to traditional customer prestige and loyalty in the different activity sectors it operates in and which has maintained it, year after year, as a company of reference for its high degree of responsibility, know-how and management capacity.

Of note among he works executed by Inabensa in 2005 (continued or completed) in the different activity sectors are:

**Electric Installations**

The generation, conveyance and distribution of electricity continued to be one of Inabensa's important growth sectors during the year. In said sector, in addition to the continuity of the electricity distribution works under pluri-annual framework contracts with Endesa (Catalonia and Balearic Isles) and Iberdrola (North and Levant Regions). Of note are the turnkey construction works for the new capacitor bank and auto-triphasic positions in the Benajama 400/220 kV substation (Alicante) for REE, the Alcocero de Mola 220 kV substation for Genesa, the 123/20 kV substation for the new Heineken España, S.A. brewery, and the 55/12 kV Ambrosero substation for Electra de Viesgo, and the enlargement of the Calviá substation on Majorca, for Endesa.
Also of note are the works carried out for energy conveyance, with the completion of section 3 of the 132 kV D/C Vilanova-Gandía transmission line, for Iberdrola, the construction of section 1 of the 220 kV D/C Cartelle-Frieira transmission line, for Unión Fenosa, the civil work and subterranean laying of a of a 66 kV D/C transmission line, the Centenario-Rastro urban route, and that corresponding to the 66 kV T/C Zaudín-Bormujos transmission line, both for Endesa.
Likewise, in this sector, we would mention the stringing of 400 and 220 kV fiber optic transmission lines for REE, for whom more than 100 km were strung under live-line and dead-line conditions.
Of note in the environment sector are the electric installation works executed in the Atabal desalination plant, in Malaga, for the Abensur-Gegremont joint venture, the enhancement and

conditioning of the electric, lighting and water supply installations in El Portitxol, on Majorca, the Camis de Es Riquers rural electrification works for Dracotel, and the installation of meteorological towers on wind farms.
There was also intense activity in the industrial sector in 2005. Of note therein were the MV and LV electric installations performed in the automotive industry for Ford, Renault and Peugeot-Citroen at their factories in Valencia, Seville, Valladolid and Vigo, in the foodstuffs industry for Nestlé at its Miajadas factory in Caceres, for Cruzcampo (Heineken) in Seville, for Productos Cárnicos de Manacor and for El Pozo, in Murcia. Installations were also executed for the aeronautical industry, such as the HV electricity network, including the transformation centers and generating units for the new EADS-CASA factory, in Seville, for the FAL A-400 M project, and the expansion of the Bahía de Cadiz Center installations, also for EADS-CASA. In addition, different works were executed in the cement industry sector, such as the expansion of the Financiero Minero factory installations, in Malaga, for the new furnace.
Of note in the transport sector were the works executed for the ADIF, Aena and GIF, among which we would mention the rehabilitation of the Villasequilla, Torrelavega, Bárcena and Ávila traction substations; the turnkey construction of three 400/2x25 kV, 2x60 MVA traction substations, and the 50/25 kV, 2x15 MVA transformation centers for the new Segovia-Valladolid high-speed railway access on the northwest corridor, for ADIF; the ancillary installations of the new 2x400 kVA emergency units at Gran Canaria airport, for Aena, and works to adapt the tunnels of the Zaragoza-Lerida high-speed line to the new European legislation.
Of special note in the services sector were the MV and LV installations in the new Postal Sorting Office in Merida; the Educational Geriatric Center of Espartinas, in Seville, for Econivel; the electric and computer installations in the new offices of the Boluda Group, in Las Palmas; the electric installations and TC at the Son Gual Golf Club in Palma de Majorca, for Agroquimics Inca; the fire fighting and control installation for the Queen Sofia Palace of Arts in Valencia; the public lighting and traffic light installations under the Public Area Integral Improvement Plan for the city of Barcelona;

the turnkey construction of the new Cobcesur facilities in Seville; and the logistics centers for Volvo Trucks in Valdemoro and Aldi Supermarkets in Isla de Dos Hremanas, in Seville.
As regards singular buildings for public administrations, work continued on the Health Campus and the administrative building of Almanjayar, in Granada and the City of Justice of Malaga, for the Regional Government of Andalusia. Works commenced on the new Faculty of Law in Seville and on the remodeling of the Conde Ybarra, Puerta de Navarra and New Zealand Pavilion buildings for the Directorate General of Heritage of the Regional Government of Andalusia.
Important infrastructure works included civil, electrification and road lighting works on industrial or housing estates such as "La Morra" for the town council of Villanueva del Rio Segura, las Bayas, Castillo del Sax, San Juan and Campes Baix.

**Railways**

For the Adif - Conventional 3,000 V dc Lines: modernization works were carried out in Chamartin and Atocha stations, in Madrid, and in the Valdepeñas, Sitges and Santa Marta stations. Catenary conditioning works were also executed on different sections of the national railway network.
On 1,500 V dc lines: of special note are the remodeling works carried out on line 3 of the Madrid metro system and electrification maintenance works for Metrosur.
Other important references include those corresponding to the completion of the Zaragoza-Huesca section of the northeast corridor; the commencement of the northwest corridor electrification works on the Segovia-Valdestillas

section of the Spanish high-speed network, for the Adif; the awarding of the 2006 to 2009 contact wire maintenance contract for the Madrid-Lerida section of the Madrid-Zaragoza-Barcelona-French Border high-speed line, and the AC and DC electrification, 220 kV substation, communications and signaling installations for line 9 of the Barcelona metro system.

**Mechanical Installations**

Construction works were completed on the Almendralejo gas compression station for ENAGAS and assembly works continued on the different main bioethanol production process piping systems and ancillary systems at the Biocarburantes Castilla y Leon facility, for Abener, in Salamanca, and on the expansion of the San Roque gas bottle filling plant, for Cepsa, in Cadiz.
Also of note are the installation works executed on pillars, structures and solar panels with tracking mechanisms at the 1.2 MW photovoltaic power plant, for Solúcar, in Seville, and the construction of mechanical maintenance platforms for the Airbus 400-M, for EADS-CASA.

**Refractory/Insulation/Passive Fire Protection Materials:**

Inabensa continued to carry out intense activities related to ancillary thermal installations in the chemical and petrochemical sector. Of special note in this sense are the burner replacement works in Naphtha Furnaces in Tarragona for Dow Chemical Ibérica, S.L., those of refractory maintenance and repair at the Tersa USW Plant, in Barcelona, for Tractament i Selecció de Residus, the renewal of the Sugimat boiler refractory lining for Utisa, and the installation of refractory linings in the F1014 and F1010 furnaces for Technip Benelux at the Dow Chemical plant in Tarragona.

On the other hand, of note in matters related with thermal insulation is the installation of equipment and piping lagging at the Biocarburantes Castilla y Leon Facility (bioethanol production), for Abener, in Salamanca.
As regards passive fire protection works, we would mention the fire resistant treatment of metallic structures, equipment skirts and bearer-plates, cable conduits and valve activators of the G4 Unit, carried out for Petronor in its Somorrosto – Muzkiz refinery under the gasoline and gas oil environmental quality enhancement project.

**Maintenance and Instrumentation**

For the electric sector, work continued throughout the year on electric and instrumentation maintenance at Almaraz, for Endesa, and Trillo, for Iberdrola, nuclear power plants; substation voltage maintenance works for Gesa Endesa; HV Line maintenance for Fecsa Endesa, in Catalonia; and the cleaning of insulation on live 400 kV lines, for REE.
In the transport sector, a maintenance contract was obtained for the catenary of the Madrid-Lerida high-speed line for the ADIF and modernization works commenced of the Tudela Verguin paralleling center on the Soto del Rey-El Entrego line, for the ADIF.
In the industrial sector, maintenance works continued on the Lexan 1 and 2 compounding plant installations, for General Electric Plastics; the electric

maintenance of the Cepsa refinery installations in La Rábida; the maintenance of the Enagás plant in Huelva and of the electric installations of Ford España; the preventive and corrective maintenance of the Bioetanol Galicia production facility, in Teixeiro (La Coruña); the maintenance of the data network of the Gkn Driveline y Faurecia factory, in Vigo; and the lighting and power system at Cepsa's plant, in Algeciras.
Of note as regards instrumentation installations were the activities at the new chloride crystallization plant in Sabiñanigo, for Aragonesas; of two 400 MW units for the Arcos CCPP, for Iberdrola (Arcos de la Frontera); and the electric and instrumentation installation works for the BOP of the Aceca Power Plant, for Iberdrola (Toledo).

**Services Concessions**

In this Division, it is important to mention the construction, financing, operation and maintenance of the installations and infrastructure and services of the Tajo Hospital, in Aranjuez, for the Madrid Regional Government, under a 20-year administrative concession contract.

Likewise of note were the construction, financing, operation and maintenance of the installations of the Olot, Cerdanyola del Vallès and Sta. Coloma de Gramanet courthouses in Barcelona, for the Infrastructure Authority of the Regional Government of Catalonia, under a 20-year administrative concession contract.

**Manufacturing**

The most important manufacturing works in 2005 were as follows:

11 kV cabinets, inverter and control cubicles, ancillary services, motor control centers and power boards for the PS10 Solar Thermal and Sevilla-PV Solar Photovoltaic power plants in Sanlúcar la Mayor (Seville), for REE. Likewise, under the PIA project, more than 500 relay rack cabinets and ancillary services panels were supplied, and equipment was manufactured for substations such as those of Castellet and Gornal, Sentmenet, Almaraz and Ascó.
On the other hand, motor control centers for diesel power plants, and medium voltage cabinets and distribution boards were manufactured for the Cas Tresorer II and Barranco II combined-cycle power plants, and in the distribution sector, 24 kV cabinets for substations in the southern area, for Endesa.
For Petronor refineries, 6 and 12 kV cabinets for Muskiz, and for Repsol, in Murcia, for the Whitening and Paraffin project, a motor control center and ancillary services boards.
For Enagás, the equipping of 6 and 12 kV cabinets and distribution boards for the expansions of the LNG depots in Barcelona, Cartagena, Tivissa, and Zaragoza. 6.3 kV cabinets and power boards in

Huelva and Murcia, and the computer room at its Méndez Álvaro Power Plant, for CLH.
Work continued for nuclear power plants with the manufacturing of spare parts and assistance with the reloading in Almaraz, Trillo, Vandellós and Ascó NPPs.
Low voltage supplies are being made for 18 complete substations for the Madrid-Valladolid high-speed line; cabinets, LV boards and motor control center for the Bioethanol facility in Babilafuente (Salamanca), which Abener is constructing; and 24 kV cabinets for the Vinalopo Pumping Station.
In the Alcala de Henares electronics manufacturing workshop, numerous items of ticketing and access control equipment were manufactured for the Euskotren and Metro Bilbao projects, for Telvent.
Of note in the energy sector were the items manufactures for REE, such as the centralization boxes for substations and the remote stations with associated electronics such as the mini ULCs and the CCSs. In the solar energy sector, control electronics were manufactured for the heliostats installed in the solar plants of Sanlúcar la Mayor (Seville).
In the Defense sector, control electronics continued to be manufactured for both the turret and body of the Leopard tank. The Division is also participating in the manufacturing of the prototypes of the new Pizarro armored vehicle, and in the aeronautical sector, it is manufacturing several test benches for EADS-CASA.

**Abroad**

The development of activities abroad has been a very important step in the company's constant efforts in relation to its presence and consolidation in new markets, both of which are necessary to meet the goals established in its strategy plan.
We would mention the following as the most important works abroad that were initiated, continued or completed in 2005:
In the electric installations activity, works were completed on the underground laying of the distribution network for the city of San Jose, in Costa Rica, for the CNFL, and civil and assembly works commenced on the Tabarca and Poas substations, and on the turnkey construction of the Cahuita, Palmar, and Cóbano substations for the ICE in Costa Rica.

As regards electricity transportation, of note were the completion of the guard wire replacement with OPGW on 3,000 km of TL for Transeléctrica, in Rumania; the continuation of the construction works on the 800 kV Sipat-Seoni TL in India; the commencement of the works on the 225 kV D/C Chichaoua-Agadir TL and the 400 kV Mediouna-Oualili TL for the ONE, in Morocco; the construction works on the 400 kV Wadialrabia-Rowies TL, in Libya; and the commencement of the execution of the 400 kV Hadjerat Emous-El Afroun II, El Afroun-Si Mustapha and El Kemis-Berouaguia TL, in Algeria, for Sonelgaz. In addition, the rural electrification works of phase II of Kenya and phase IIIB of Tanzania were successfully completed.
In the mechanical installations field, maintenance works continued on the installations of the 60,000 $m^3$ capacity oil product storage depot in the port of Nouakchott, in Mauritania, during the guarantee period that finalizes in 2006.
In the railway sector, of note were the completion of the manufacturing and supply of a track grinding machine; the commencement of the manufacturing of another unit for the Tianjin Binhai Mass Transit Development in China; and the continuation of the maintenance works on the Basmane-Menemen-Aliaga and Alzancak-Cumaovasi railway lines, for the TCDD, in Turkey.
Of note in the communications sector were the deployments of PLC (Power Line Communications) systems on the distribution networks of the Arab Emirate of Abu Dhabi, for Adwea, and for ONI in Portugal.

As regards ancillary manufacturing for the electric and electronic sectors, work intensified on the manufacturing and equipping of containers for the control of gas turbines and analyzer panels in different energy generation stations abroad for General Electric. In addition, urban traffic regulation and electronic control equipment was manufactured and supplied for the cities of Xin Xang, in China, and Haipon, in Vietnam, as were 167 ticket vending machines for the metro of the city of Tianjin, in China.

**Inabensa Maroc**

In 2005, the activity of Inabensa's local company in Morocco focused on the development of the rural electrification contracts for the Office National de l'Electricité (ONE), with more than 350 towns throughout the northern and southern regions of Morocco having been provided with electricity. In addition, some 50 km of OPGW cable were strung on the 225 kV Step TL, for the ONE as well.
In the communications sector, Inabensa Maroc executed 7 km of channeling and laying of 12-pair fiber optic cable for Meditel's communications system, for whom the turnkey construction of 60 mobile telephone stations with GSM and SDH systems was also executed, electrifying 20 of the base-station network Meditel has in Morocco.
Also of special note is the execution of 11 km of sewerage piping, the execution of the 20 kV electricity supply ring and the external telephone installations in the large tourist complex of Saidía, for Fadesa, in the north of Morocco, close to the border with Algeria.
Another aspect of note in Inabensa Maroc's activity was the manufacturing of prefabricated concrete supports for the rural electrification works, for which more than 5,000 units were manufactured in its two plants in Chichaoua and Taourirt.

**Inabensa France**

During 2005, Inabensa France consolidated its position as an installations company in France and continued with the works under the 2004-2005 framework contract for Gestionnaire de Rèseau de Transport D'électricité (RTE), of note among which were the execution of the civil works, the raising of supports and stringing of conductors on the 90 kV S/C Pleumartin-Preully TL, the reinforcement of the 63 kV S/C TL with the installation of anti-cascade supports, the disassembly of 10 km of the 90 kV D/C Cognac-Nicene TL, including the demolition of the support pedestals. In addition, towards year-end, reinforcement works began on the 225 kV S/C Bouteau-La Capelle TL, including project engineering and the changing of line insulators.
Also of note was the participation of Inabensa France in RTE's internal workshops on prevention and safety. It participated as a guest installation company of reference in this material.
Some 100 km of fiber optic cable were strung for Alcatel on the 400 kV Dambron-Verger and Cordemais-Louisfert TLs.

**Inabensa Bharat**

Inabensa Bharat continued to lead Inabensa's operations in India and other Asian countries in the vicinity such as Bhutan or Nepal.
In 2005, it commenced the construction of the 800 kV Sipat-Seoni TL for Power Grid, and directly executed the civil works, assembly and raising of towers and the stringing of conductors.
In addition, and as an export company, it managed the manufacturing and CIF supply of the array of heliostat mirror support structures for the PS10 11 MW solar concentration power plant Abener is constructing in Seville.

**Inabensa Portugal**

Of note in 2005 was the participation of Inabensa Portugal as a subcontractor of Inabensa on the PLC technology deployment project for ONI. It performed the MV and LV works on EDP's distribution network, complementary to the communication equipment installation works related with the deployment.

## Telecommunications

The activity in the telecommunications sector focused mainly on the integration of turnkey networks and projects.
In 2005, this line of business was consolidated in its traditional external plant construction and maintenance activity and in the provision and maintenance of customer loops and equipment. In relation to the latter, there was an important increase in the provision and maintenance of ADSL broadband and its entire range of associated products, mainly imaging (TV through ADSL).
In addition, work was carried out on the integration of telecommunications networks and the development of new products, such as the implementation of the PLC system on electricity distribution networks.

### Abentel

In the development of the global contract (for 2002 to 2006) with Telefónica de España S.A.U., the volume of work carried out for this customer was higher than in the previous year, with extra work having been obtained in Madrid and Tenerife. This consolidates the company's position as leader as regards awarded works volume and implementation in provinces, given that it is now operating in a total of 10 (Alicante, Badajoz, Barcelona, Cadiz, Las Palmas, Jaen, Madrid, Seville, Tenerife and Valencia). On the other hand, it continued to be among the leaders as regards quality levels throughout the year with scoring higher than the average of the global contract. This was the result of the policy employed in the three previous years, further developed and expanded in 2005, in relation to the achieving of high levels of quality to meet the customer's demands.

In this sense, the following activities are of note:

Consolidation of the Integra Project, having been pioneers in the dispatching and fulfillment of work orders via mobile telephone with GPRS technology. Its use was not only fully extended to the maintenance activity, it was also extended to the entire activity related with the provision of Broadband and Basic Telephone services associated therewith (Single Visit).


Likewise, for the Broadband activity, the technical personnel were provided with a blackberry terminal as a work reception tool.
The improvement groups continued operations. These are formed by personnel from different levels with different specialties, who analyze the processes and opportunities for improvement. As a consequence of these analysis processes, improvement actions are implemented, objectives are established and the results are monitored. Since the previous year, the groups are utilizing 6-Sigma technology and a total of 20 projects have been executed in Abentel's regional offices and quite a number of employees within the structure have been trained up to "Green Belt" level. Numerous improvement actions have been proposed as a result of these projects.
The centralization and globalization of fault dispatching, with a single work distribution office set up (DCA) to cover all activities and the whole country. The DCA has been made responsible for monitoring and diagnosing the tests carried out on the works executed by the technical experts. The call center also continued to operate. This is where the calls from the technical experts are received and the customer's opinion is sought on the works carried out.

Development of new activity management computerized applications and upgrading those already implemented. Of note among the former, the Simpa application which obtains a table of the Customer View quality indexes at any level, including technical level. This tool is operative for all supply and maintenance activities.
In 2005, Abentel collaborated with Telefónica on the implementation of a series of systems that are essential for both companies. These include the GIA C.G. (Integral Management of the Authority Layer Activity) for the provision and maintenance activity or NILO (External Plant Certification and Billing) for the external plant activity. This collaboration has led to important synergies that result in greater efficiency in the start-up of the systems.
The number of in-house technicians and management personnel increased by almost 300 throughout all the regional offices, with a special effort having been made in Madrid, Barcelona and DCA.

For this purpose, a great effort was made in the training of technical personnel, employees and management, and the number of programmed courses was trebled with more than 6,000 hours being dedicated to training activities.
Likewise, during the year, the cable operators department continued supply works for the operator Auna in Madrid, Barcelona and Seville, and commenced supply of active and passive materials for the customer.
During the financial year, the Quality Certificates according to the Standard UNE-EN ISO 9001:2000 and the Environmental Management Certificate according to the Standard UNE-EN ISO 14001:1996 were maintained. These cover all the Regional offices.
Furthermore, the Occupational Risk Prevention Management System Certificate according to the OHSAS 18001:1999 specification was maintained.
In addition, training was given to the entire management team, including delegates, on the EFQM self-assessment model, which must be complied with and completed in 2006.

**Inabensa's Telecommunications Division**

During the course of 2005, the mobile telephone infrastructure construction activity increased. This related to railway signal applications and the deployment of 3G/UMTS technology activities carried out by operators such as Telefónica Móviles, Amena and Vodafone, and by the main technology companies: Ericsson, Siemens and Nortel.
In addition, the activities related to mimetization and the reduction of the environmental impact of mobile telephone base stations continued to increase and Inabensa is now a reference company in the sector.
On the other hand, the Research and Development activity carried out by the Division is also of note, with the execution of the WIPAC (wi-fi communications applied to the control and care of Alzheimer sufferers) Project, funded under the Ministry of industry's PROFIT program.

**Marketing and Ancillary Manufacturing**

In 2005, leadership in the national market was maintained and international implantation process (Mexico, United States, and Argentina) was consolidated as suppliers of electrical, instrumentation and communications material for the chemical, energy, telecommunications and industrial sectors.
Of special note is the important development of new services such as purchasing logistics and storehouse outsourcing which, together with the execution of new turnkey projects, ensures our future growth.
Also of note was the diversification in ancillary manufacturing through the incorporation of the production of structures for solar energy power plants as a new product.

**Nicsa**

This year was fundamental as regards the Company's evolution. The expected results were surpassed and its international presence as a provider of electric, instrumentation and communications material for the chemical and petrochemical industries, refineries, combined-cycle, nuclear and thermal power plants, and the heavy industry in general was consolidated.

The main references in Spain were:

Signing of a framework agreement with Repsol Ypf for the supply of medium and low voltage electricity cables for all its production centers.
Supply, for Petronor's (Repsol Ypf) Gas Oil Hydrodesulphurization Facility in Bilbao, of power cables, junction boxes, glands, telephony system, conduits, grounding system, lighting, handling stations and current taps.
Supply for Enagas for its main projects: Expansion of the Cartagena, Barcelona and Palos (Huelva) Plants.
Framework agreement with Cepsa for the supply of electrical and instrumentation material, having participated during the year in its main investment project, the Aromax project. The materials included in the framework agreement are: medium and low voltage power cables, instrumentation cables, handling stations, current taps, trays, junction boxes and glands.
Supply of cables, lighting, busbars, trays, conduits and grounding system for the Cristóbal Colón (Huelva) and Castellnou (Teruel) combined-cycle power plants Initec Energía is constructing for Endesa and Electrabel, respectively.
For Técnicas Reunidas, the supply of handling stations, lighting, current tap panels, conduits and beaconing for the Modernization of the Tupras Refinery, in Izmir (Turkey), and handling stations and the lighting system for the Diesel Hydrotreatment Complex in Yambu (Saudi Arabia), for Aramco.
As regards international activity, we would mention that Nicsamex S.A. de CV, the subsidiary in Mexico, was awarded a 20-million dollar contract by Construcciones Mecánicas de Monclova to procure and supply material and equipment for the following activities: electric, telecommunications, mechanical, instrumentation, industrial security and package equipment for three oil-drilling platforms (Sihil A, Akal W y Akal Q) belonging to Pemex, in the Gulf of Mexico. This contract represents a great success, not only for the value thereof, but also for the value-add that has been given in relation to service and commitment to the customer.
The US subsidiary, Nicsa Industrial Supplies, underwent important restructuring that concluded with the opening of a Commercial Office in Houston, which complements the activity of the office in Florida. The Argentina subsidiary Nicsa Suministros Industriales is undergoing a homologation process with the main potential customers in the area.
During the year, the Occupation Risk Prevention System was certified according to OHSAS 18001:1999, and an Environmental Management System was implemented according to ISO 14001:2004. It is currently at the certification process stage.

**Abencor**

At year-end 2004, Abencor underwent a structure change that focused its organization on the customer through the creation of four Sales Divisions, each dedicated to a specific sector of the Market (Energy, Installers, Communications and Environment, Industries and Alternative Energies). The implementation of the new organization has been satisfactory and this fact, together with the good development of the market, in general, resulted in the objectives established in the Strategy Plan for the year being greatly surpassed. The specialization policy has led to the structuring of a coherent base of products in each of these sectors, to them being complemented with other new products, and the establishment of customer-individualized market strategies, which have resulted in a more efficient commercial policy.

As is customary, the Energy market is that which contributed most to this improvement. It represented 45% of the company's EBITDA. In addition, the sale of high voltage cables was added to the products that were on sale up until 2004 (mainly transformers, auto-valves, stringing equipment, insulators, naked cables, low and medium voltage insulated cables), and the homologation of a new type of static meter is nearing conclusion.
The Installers Division focused, mainly, on the works that are executed in the railway transport sector. The homologation of different products, such as mineral insulated cable and catenary hanger cable, has already been achieved or is at a very advanced stage.
The Communications Sector appears to be coming out of the atony of recent years and important investments are expected to be made in forthcoming years. In Abencor, the same sales policy was employed and power and communications cables, and huts and encapsulated transformers were supplied.
As regards renewable energies, Solar Energy was the main focal point, and different sanitary hot water panels and photovoltaic panels were supplied.

The main supplies throughout the year were:

- Sale of power transformers to Endesa.
- Sale of autotransformers to Endesa.
- Catenary contact wire to the Semelcosur joint venture to be installed on the Cordoba-Malaga High-Speed Line.
- Sale of 45 and 66 kV cable for Endesa and Cobra Instalaciones y Servicios.
- Fiber Optic cable to be installed on the A-8 in Cantabria, Aumar A-7, in Levant, and for the M-50 in Madrid.
- Supply of meters for Unión Fenosa and Iberdrola.
- HV cable for the Jucar Vinalopo joint venture.
- MV cable and encapsulated transformers for Madrid metro.
- Sale of stringing equipment to Elecnor, Semi and Inabensa.

In relation to the logistics activity, work continued on the development of the outsourcing of Endesa's distribution products in Andalusia and the Canary Islands. Also of note was the increase in the activity in Andalusia due to the handling of the Alborada Plan materials. This activity, which has been the traditional one up until now, has been complemented by the incorporation of the materials from the stores of the Unelco-Endesa owned generating plants of S Bartolomé de Tirajana and Jinámar, on Gran Canaria, and those of Granadilla and Candelaria, on Tenerife.
Finally, towards year-end, work commenced, in the Andalusia Region, on transport material logistics for Endesa. To undertake this new responsibility, the storage facilities were expanded, and the store itself was transferred to a new location where there is more than 13,000 $m^2$ of storage space available. The warehouse has been fitted with 14 loading and unloading bays, traveling crane, hoist, etc., and there are 500 $m^2$ of office space.
In addition, an agreement was signed with REE to store some of its materials at our Seville facilities.
Abencor continues with its commitment to quality and conservation of the environment. It holds the Quality Certificate according to UNE-EN ISO 9001:2000 and Environmental Management according to UNE-EN ISO 14001:1996.
Throughout 2005, it expanded its Environmental Management certificate to cover the new centers in Las Palmas and Tenerife according to Standard ISO 14001:2004.
As regards the Occupational Risk Prevention System, it was certified according to the OHSAS 18001:1999 specifications by the company TÜV Internacional Grupo TÜV Rheinland S.L.

**Eucomsa**

A good part of the activity lost in 2004 as a consequence of the revaluation of the euro against the dollar, which led to an unavoidable loss of competitiveness in the international markets with an economy based on the dollar as the currency of reference, was recovered.
Although the aforementioned difficulty remained in 2005, this was compensated with exports to euro area countries and manufacturing was diversified towards structures for solar power plants as a new product.
The most noteworthy activities for the year are:

- Supply of 400 kV towers for REE for different lines such as those of Galapagar-SS de los Reyes, Tordesillas-Segovia, Mesón-Puentes, etc.

- Supply of towers for CSE-Endesa for the 220 kV Cartuja-Puerto de Sta. María and D. Rodrigo-Santiponce lines.

- Supply of towers for Fecsa-Endesa for different lines.

- Export of towers to Ireland for 110 kV lines.

- Supply of 400 kV towers for CME of Portugal.

- Supply of telecommunication towers for Inabensa for different operators and for Morocco.

- Supply of telecommunication towers for CEC in Portugal.

- Supply of structures for the PS10 solar power plant to Abener, and for the AT, IS and ST plants to Inabensa.

The Plate Division concentrated on the manufacturing of signals, and during the year luminous signals based on low-consumption technology and photovoltaic supply using LEDs, and the manufacturing of fiber optic distribution cabinets for Telefónica and other customers such as Euskaltel, Uni2, REE, etc., were incorporated.

As regards the tower testing station, an activity that commenced in 2004, tests were carried out for different national and foreign customers. Of note among which are the tests for REE on 2 towers for the ONE of Morocco; the testing of a 3-circuit tower for MADE-Endesa; tests on two 400 kV towers for Gam-Arak of Iran; and tests on different standardized towers and crossheads for Funtam, Iberdrola, Afeme, Tecgra, etc.
Tests will be carried out early in 2006 on a special 100-ton tower for RTE (France), as will other tests for different foreign customers.