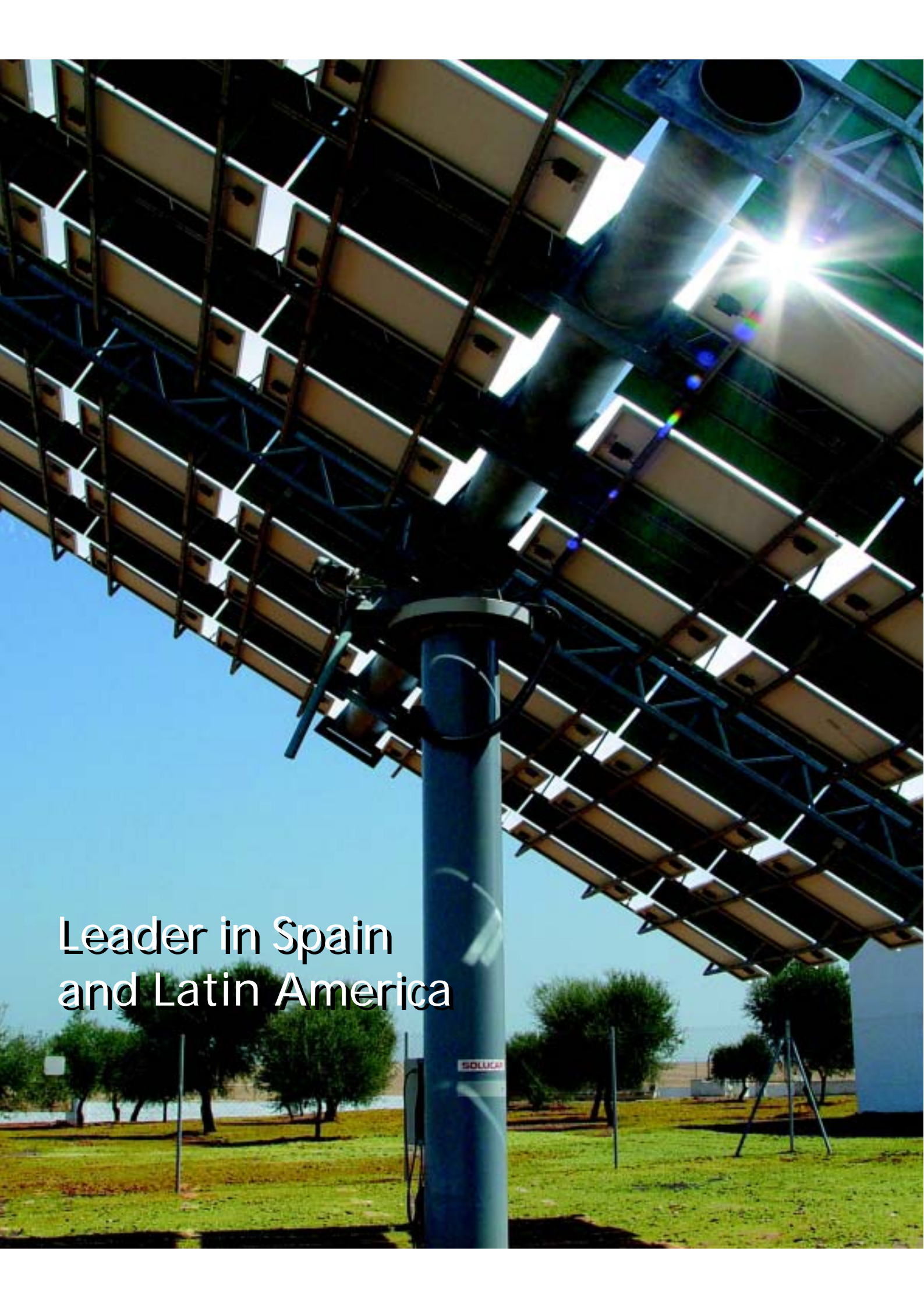


# Industrial Engineering and Construction

[www.abeinsa.com](http://www.abeinsa.com)

- Engineering, construction and maintenance of electrical, mechanical and instrumentation infrastructures for the energy, industrial, transport and services sectors. Development, construction and operation of industrial plants, conventional power plants (cogeneration and combined cycle) and renewable energy facilities (bioethanol, biomass, wind, solar, geothermal), as well as those based on hydrogen and fuel cells. Turnkey telecommunications networks and projects. Merchandising of products related to aforementioned activities as well as manufacturing of auxiliary elements for energy and telecommunications.





Leader in Spain  
and Latin America

SOLUCIA



In spite of the difficult year and the more competitive market situation, the Industrial Engineering and Construction Business Unit has maintained its leading position in Spain and Latin America, having registered higher-than-expected results in 2004. Sales for the year exceeded 725 million euro, an 8.2% increase on 2003 and the value of the service orders reached 1,000 million euro.

This increase of activity has enabled our consolidation as one of the major groups of companies at world level in our fields of activity: Energy, Installations, Telecommunications and Commercialization, and Ancillary Manufacturing.

In 2004, we have put enormous effort into the internationalization of our activities by expanding to new markets, Eastern Europe and the Mediterranean Area, which has enabled us to establish a solid growth base for forthcoming years.

This growth is based on the basic pillars of our strategic plan: customer satisfaction, internationalization, profitability, innovation, human resource development and social involvement, which ensure balanced and profitable growth with solid environmental commitment.

This commitment has led us to widen our responsibility towards the environment through the development of innovative projects (R&D&i) in both the solar energy and hydrogen and fuel cells sectors.

In the solar energy sector, work has commenced on the erection of the largest solar power plant built with tower technology and heliostat field to produce 11 MW, and the construction of a 1.2 MW two-fold concentration photovoltaic power plant.

In the hydrogen and fuel cells sector our subsidiary, Hynergreen Technologies S.A., which is focused on the production of electricity through fuel cells and the use of hydrogen, is on the Advisory Board of the European Hydrogen and Fuel Cell Platform, recently launched by the European Commission. This platform's main objective is to facilitate and accelerate the development and use of European fuel cell and hydrogen-based energy systems. One of the main projects of Hynergreen is the development of a power plant of energy of 300 kW based on that technology.



During the year, the Industrial Engineering and Construction Business Unit has achieved major undertakings that have enabled us to increase our prestige and capacity for performing major infrastructure works worldwide, among which the following are noteworthy:

Successful completion of the year-long continuous operative availability of the combined-cycle enlargement to 450 MW of El Sauz thermoelectric power plant, in Mexico.

Completion of the turnkey construction, for Iberdrola Generación, of the balance of plant (BOP) and ancillary services for units 1 and 2 (800 MW) of the combined-cycle plant at Arcos de la Frontera-Cadiz (Spain).

Delivery of the ETBE (composite currently used in gasoline as a detonation suppressant in place of lead) production plant, built at Cepsa's refinery in La Rabida – Huelva (Spain).

Completion of the turnkey construction of the oil-products storage plant at Nouakchott (Mauritania).

The correct execution of our undertakings has fully met our customers' expectations, upon us having provided integrated solutions, adapted to their needs.



The enormous confidence shown by our customers has enabled us to achieve a high contracting volume; with us having been awarded important projects in our activity sectors, among which we would mention:

The Comisión Federal de Electricidad of Mexico awarded us two new construction projects; the turnkey construction of the Baja California Sur II internal combustion motor power plant, to be located in the municipal district of La Paz, in the State of Baja California Sur, and the modernization of the Portes Gil thermal power plant, in the city of Rio Bravo, in the State of Tamaulipas.

Execution of the works included in the electric system project for the new air terminal at Barcelona airport.

Several rural medium voltage (MV) / low voltage (LV) contracts were forthcoming from the Office National de L'Électricité (ONE), in Morocco. These contracts are to be executed, mainly, in the provinces of Taroudant, Chichaoua and Agadir (southern area), Boulemane (central area), and Chefchaouen and Nador (northern area).

Our strategy for the future is based on the development of integrated products and significant growth in the infrastructures, concessions, singular projects and higher added value installations activities, to enable us to continue to offer our customers high-quality projects that meet their needs.

A more detailed account is provided here-below, of our main achievements in 2004, in our fields of activity: Energy, Installations, Telecommunications and Commercialization, and Ancillary Manufacturing.

### Energy

Our activity in this area is focused mainly on the promotion, construction and operation of industrial and conventional energy (cogeneration and combined-cycle), and renewable energy (bioethanol, biomass, solar and geothermal) plants; and on the exploitation of businesses and activities related to electric energy production using fuel cells. As we have already mentioned, 2004 was a year that saw the completion and/or commencement of

significant projects to a high degree of satisfaction of our customers.

On the other hand, intense activity continued in R&D&i in several fields, such as solar energy, which enabled our development as providers of specific services and components for solar power plants. Likewise, there were important achievements in the hydrogen and fuel cell sector, with work being performed in 4 areas: the search for new different technology fuel cell applications, the development of new fuel cells (reversible, compact and direct), the production of pure hydrogen from renewable energy sources, and renewable energy integration projects.

### Abener Energía

2004 was a year of market consolidation for Abener. In addition to the definitive handing over of the combined-cycle enlargement to 450 MW of El Sauz thermoelectric power plant (Queretaro, Mexico), and continuing with the construction of the combined-cycle enlargement to 230 MW of Hermosillo thermal power plant (Sonora, Mexico), two new contracts were obtained in the country; the construction, for the Comisión Federal de Electricidad, of the 37.5 MW Baja California Sur II (Baja California Sur, Mexico) internal combustion power plant, and the remodeling of the 187.5 MW Emilio Portes Gil (Tamaulipas, Mexico) thermal power plant.

On the home market, the execution of two significant contracts was completed: BOP and ancillary systems



for the 800 MW Arcos de la Frontera (Cadiz) combined-cycle power plant, units I and II, for Iberdrola Generación; and the ETBE 34,028 ton/year production plant at Cepsa's refinery in Huelva (Spain). Moreover, work continued on the construction of the bioethanol (alcohol, produced by cereal fermentation and subsequent distilling, to be used as fuel) plant at Babilafuente (Salamanca, Spain), which, with an annual production capacity of 200 liters will be the largest in Europe and the third to be constructed by Abener in Spain. Finally, a contract was awarded to construct Europe's largest tower technology thermo-solar power plant. Its total installed output will be 11 MW and it will be located in Sanlúcar la Mayor (Seville, Spain). This plant will be the first of its kind to be built in Europe for commercial exploitation and is Abener's first project in the solar power plant market, a market with enormous growth perspectives worldwide over forthcoming years.

### Main Contracts

#### **37.5 MW internal combustion motor power plant in Baja California Sur (Mexico)**

Abener was awarded, in December 2004, by the Comisión Federal de Electricidad (CFE) of Mexico, the turnkey construction contract for the Baja California Sur II internal combustion motor power plant. The plant will be located in the municipal district of La Paz, in the State of Baja California Sur (Mexico).

The project comprises the design, supply, installation, tests and commissioning of a net total capacity 37.5 MW ( $\pm 15\%$ ) internal combustion motor power plant, as well as the 230 kV substation and fuel and water supply systems. The process will consist of the burning of liquid fuel in an internal combustion motor, generating exhaust gases that will be delivered to a heat recovery boiler where steam will be generated to heat the fuel system. The power plant will have a seawater evaporation system to produce distilled water to supply the heat recovery units, closed cooling water circuits, fire-extinguishing system and utilities.

Execution commenced in December 2004 and provisional acceptance is scheduled for January 2007.

#### **Remodeling of the 187.5 MW Emilio Portes Gil thermal power plant (Mexico)**

Likewise, in December 2004, Abener was awarded, under an open call for bids by the Comisión Federal de Electricidad (CFE), the contract to modernize the Emilio Portes Gil thermal power plant. The plant is located in the city of Rio Bravo, Tamaulipas State (Mexico).

The contract consists of the modernization, supply, installation and construction of a heat recovery unit and its combined-cycle integration, together with its equipment and ancillary systems, as well as all the adaptations required to the current facilities and systems so that the plant's existing 150 MW gas turbine and 27.5 MW steam turbine may operate, in an integral and reliable manner, in combined-cycle. Work on the project commenced in December 2004 and the estimation for the plant to be brought into operation is July 2006.

#### **Combined-cycle enlargement to 450 MW of El Sauz thermoelectric power plant (Mexico) (México)**

Abener achieved Final Acceptance of the facility in December 2004, subsequent to the successful year-long continuous operative availability test. The plant was constructed under the lump sum public funding modality for the Comisión Federal de Electricidad (CFE) of Mexico.

The project consisted of converting the two existing turbo-gas units to combined-cycle, adding a 143 MW net output.

#### **Combined-cycle enlargement to 230 MW of Hermosillo thermoelectric power plant (Mexico)**

In July 2003, the Comisión Federal de Electricidad of Mexico awarded Abener the lump sum public funding modality contract to convert the existing turbo-gas unit to combined-cycle, adding an 80 MW net output.

Construction of the power plant is at a very advanced stage, the commissioning and start-up activities having already commenced. Its connection to the network and commencement of commercial operation is scheduled for around mid-May 2005.

#### **BOP and Ancillary Systems for Units I and II of the 800 MW combined-cycle power plant at Arcos de la Frontera, in Cadiz (Spain)**

During the year, the turnkey construction was completed, for Iberdrola Generación, of the BOP and ancillary services systems (cooling tower, water and





effluent treatment, regulation and metering station (RMS), compressed air, auxiliary boiler, 6 kV cabinets and LV and MV boards) of units 1 and 2 (800 MW) of the combined-cycle plant at Arcos de la Frontera (Cadiz, Spain).

### **34 MK ETBE production plant in Huelva (Spain)**

Abener successfully completed, in mid-2004, the turnkey construction of an ETBE (composite currently used as a detonation suppressant in place of lead) plant at Cepsa's refinery in Huelva (Spain), the production capacity of which is 34,028 tons/year. The plant commenced commercial operation after having successfully passed the production, capacity and availability tests in accordance with the project specifications and requirements.

### **200 MI bioethanol production plant in Salamanca (Spain)**

The construction of this plant, on which work commenced in November 2003, is at a very advanced stage, with the commencement of commissioning and start-up scheduled for the first quarter of 2005, and commercial operation for December that year. It is the third bioethanol (alcohol produced by cereal fermentation and subsequent distillation for use as fuel) plant to be turnkey constructed by Abener in Spain. It is Europe's largest with an annual production capacity of 200,000 m<sup>3</sup>, and will be the first in the world to incorporate bioethanol production technology using biomass.

### **Thermosolar power plant with capacity up to 11 MW with tower technology in Seville (Spain)**

Abener was awarded in July 2004 with the project for the construction of a turn key central receiver solar collector, with an installed power of 11 MW. The central receiver solar collector is expected to commence its commercial operation in June of year 2006. This power station is the first of its type that is built in Europe with a commercial operation purpose.

The power station will consist of 624 heliostats that have, each one of them, a surface of 121 square meters and are organized suitably in a surface called "solar field". These heliostats automatically follow the sun and will concentrate their reflected ray in a acuatubular receptor located in a 120 meters of height collector/tower, in which the steam that is formed is lead to a turbine-type alternating current generator, in which the steam expands, giving a power of 11 MW to the transport network.



### **Operation and Maintenance**

The Operation and Maintenance (O&M) line of business, applied to power plants, includes facility equipment and systems preventive, scheduled and corrective maintenance, as well as plant operation to achieve reliability of the functioning of the facility and ensure the fulfillment of design parameters, in terms of rating, availability and load factor.

The O&M Division is carrying out this activity at seven different facilities (four cogeneration and three gas strata based plants), and is also providing O&M technical assistance at another cogeneration plant. In addition to performing the O&M tasks at the different plants, Abener is also responsible for their operation.

These plants are in seven different provinces in three Autonomous Regions. Their total installed output is 165 MW. In 2004, their combined electric energy generation was 1,117 GWh.

We must emphasize that three of these facilities sell their surplus energy in the electric energy production market (the so-called electric "pool"). Management of the sale of this energy, to maximize earnings in accordance with the market rules, has been undertaken as another task to be performed by the O&M Division. It also provides these same services for two of the Bioenergy Business Unit's facilities. The total annual energy managed for these five facilities is 1,225 GWh.



### Solúcar Energía

Solúcar continued to consolidate its presence in the solar energy product development sector and maintained its leading, national and international, position as a provider of specific services and components for solar power plants.

The year's most noteworthy references include the works carried out on the development of saturated steam direct generation technologies in parabolic-cylinder concentrator absorber pipes and in tower and heliostat power plant receivers; the development of photovoltaic concentration technologies from values of less than 2x to limits in excess of 1,000x; solar applications promotion activities in the framework of the Aznalcollar TH project for economic and social recovery of the mining lands; tasks related to the construction of the Sevilla PV plants – photovoltaic 1.2 MW output and two-fold concentration -, and PS10 – 11 MW thermoelectric tower type plant -; and activities related to the promotion of PS20, Aznalcollar 20 and Solnova 50 thermo-solar power plants, which are included in the 200 MW strategic framework for the Sanlúcar la Mayor area. Moreover, the Copero photovoltaic projects were launched in conjunction with Emasesa, the water company of Seville, with a total 800 kW electric output to be installed.

### PS10 Project

On June 28, 2004, the foundation stone of the PS10 plant was laid. It is to be Europe's largest electricity production solar facility.

The solar facilities are located on the lands of the Casaquemada estate, in the municipal district of Sanlúcar la Mayor, Seville.

The 11.0 MW rated PS10 plant is being promoted by Sanlúcar Solar, S.A., and has been designed to produce 23,000,000 kWh of electricity a year, sufficient energy to supply a population of 10,000. PS10 comprises a large heliostat field, mobile mirrors that reflect and concentrate the solar radiation they capture on the receiver on top of a 100 m tower. Thus, 624 units, each with 120 m<sup>2</sup> of reflective surface area, throw the thermal energy required to produce steam onto the receiver, a cavity of approximately 200 m<sup>2</sup> of water-cooled energy exchange surfaces. This is sent to the turbine where it is expanded to generate the electricity by means of

the opportune connection to an alternator. Year-end 2004 was when the facility's most significant orders were placed for the receiver and the turbo-generator unit.

This project is the launching pad, following several years' research and development by Solúcar, for the so-called "tower and heliostat field" renewable solar resource electric exploitation technology. The PS10's main contribution to the development of this technology is the fact that it is the first tower type thermal solar power plant anywhere in the world that will produce electricity in a stable and commercial manner.

### Sevilla PV Project

The company Fotovoltaica Solar Sevilla, S.A., 80% Solúcar-owned and 20% Instituto para la Diversificación y Ahorro de la Energía (IDAE), is constructing the 1.2 MW Sevilla PV photovoltaic solar power plant. The plant, which uses two-fold concentration and 2-axis sun tracking concepts, will generate, as a Special Regime production facility, about 2.4 GWh of electricity a year that will be evacuated to the electric network.

The Sevilla PV plant has 170 tracking devices with an opening of about 100 m<sup>2</sup> that combine, in almost equal proportions, the photovoltaic modules capturing area and the mirrors area. The facility is on the Casaquemada estate in the municipal district of Sanlúcar la Mayor.

Year-end 2004 coincided with the completion of the engineering works and the issuing of the project's most significant purchase orders for the photovoltaic modules, inverters, mirrors and trackers.



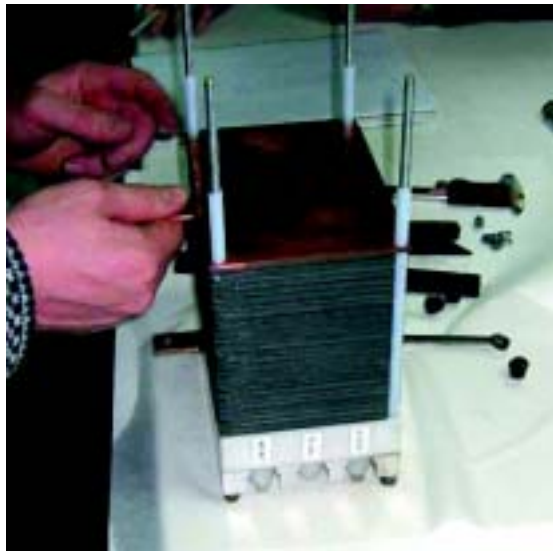
### Hynergreen

The objective of Hynergreen Technologies, S.A. (Hynergreen) is to organize and operate businesses and activities related to different technology fuel cell electric energy production, as well as the production of hydrogen from renewable sources, and its clean and efficient use.

It has two divisions: Research, Development and Technological Innovation (R&D&TI), and Projects.

Hynergreen carries out research, development and innovation work in four major areas of activity:

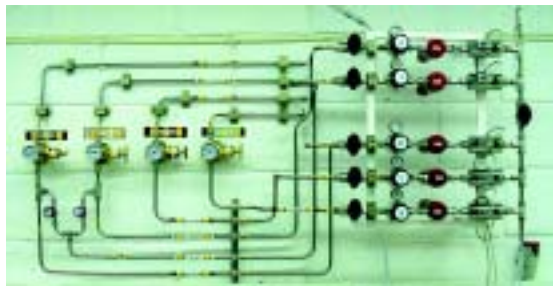
- 1.- The search for new applications for different technology fuel cells. Systems for telecommunications, domestic and transport applications. In this sense, Hynergreen is analyzing the "market niches" that will most benefit in the short, medium and long term, from the introduction of fuel cells and which, due to their interest, will contribute to the development of this technology.
- 2.- The development of new reversible, compact and direct fuel cells. We would emphasize here, both the collaboration with different fuel cell manufacturers to define parameters and assess prototypes, and its work on the Fuel Cell Standardization Committee, defining national and international standards for these devices.
- 3.- The production of pure hydrogen from renewable energy sources. The hydrogen and fuel cells themselves are not clean or sustainable. This aspect depends on the origin of the fuel (hydrogen); thus, the achieving of clean, sustainable and local hydrogen production, which contributes to the development of the renewable energy sources is, a priori, an important task.
- 4.- Renewable energy integration projects in which, through the use of solar, wind or biomass energy, hydrogen is produced; the renewable energies can greatly benefit from their relationship with the "Hydrogen Vector", upon it being a means of storage that would prevent their intermittent nature, or that would resolve the difficulty of their use in mobile applications, such as transport.



National or international-scale projects are currently being developed in each of the four lines in order to achieve the maximum possibility of success in each of the activities.

Therefore, Hynergreen is a company strongly focused on R&D with the clear objective of electric energy production using clean and renewable sources, as the basis for sustainable development for the future.

Its facilities in Seville include a fuel cell and hydrogen advanced technologies testing and characterization laboratory. At the expansion phase, it is currently equipped with different gas installations, different technology hydrogen storage systems, electronic and computer-controlled control and metering equipment, and a long etcetera that will place it, upon completion, in an outstanding position at national level.





### Installations

The activity in the installations sector is mainly focused on engineering, construction and maintenance of electric and mechanical infrastructures, and instrumentation for the energy, industry, transport and services sectors; installation of insulating, refractory and passive fire-proofing materials.

This activity is carried out by the Instalaciones Inabensa, S.A. (Inabensa) Business Unit and by its subsidiaries abroad.

### Inabensa

The close of the 2004 financial year saw Inabensa continue to grow. This is Inabensa's tenth anniversary and the Company management result for the period has greatly exceeded the objectives set down in its strategy plan, with the company having reached significant registers that endorse its leading position in the general industrial installations, the very high voltage energy conveyance, the high-speed railway electrification, and the electric and electronic ancillary manufacturing markets.

The Company's average annual sales have increased by more than 11% over this same period. Under its decided internationalization strategy, Inabensa has executed significant projects in more than 30 countries, with 27% of its sales coming from abroad where it has a stable presence through permanent offices in Rumania, Costa Rica and Libya, or through subsidiaries in Portugal, France, Morocco and India. Inabensa's sales figure for 2004 is more than 12% up on the 2003 figure and its contracting portfolio registered a 17% increase during the year.

Quality management, which has been one of the basic pillars of the success accumulated over the years, was strengthened during the year upon Inabensa adapting its quality system to the requirements of the PECAL 2120:2000 standard, and the incorporation of the system's technical regulations and legislation management in the computerized system

The results of the application of its quality and environmental management systems can be seen in its customers' continuous acknowledgements, with Inabensa having been awarded, in 2004, the Iberdrola Prize for Excellence in the Services category for Large Companies.

As regards occupational accident safety and prevention, the certifying process of the Prevention System, to OHSAS 18001:1999 specifications, commenced towards the end of the year.

The progressive tendency towards a reduction in accident statistical indexes continued, with a 6% and 17% drop in the incident and seriousness indexes, respectively, compared to the figures for 2003. Inabensa has played a leading role in matters related to occupational risk prevention, upon General Electric Plastic achieving one million accident-free hours in 2004 (where a worker had to go on sick-leave), at its facilities in Cartagena. We would especially mention the following among the works that commenced, continued, or were completed by Inabensa in its different activity sectors, in 2004:

### Electric Installations

In 2004, in the energy generation, conveyance and distribution sector, we would especially mention singular projects such as the civil works and assembly of the 220/66 kV Puerto Santa Maria substation (SS), for Endesa; the remodeling of the 66/15 kV Inca SS, for Gesa; the construction of the 132/20 kV Burela SS in Lugo, for Electra de Vigo; the underground laying of 12 km of 400 kV line for REE, at Barajas airport; and the 132 kV Ardoz-Torote line, for Fecsa; the civil work, elevation and stringing of the 132 kV Valdemono-Warner Transmission Line (T.L.), for Unión Fenosa; the elevation and stringing of the 400 kV Palos-Guillena T.L., for Solucion, and the construction of the 220 kV Vilanova-Gandia T.L., for Iberdrola.

The execution of the pluri-annual electric distribution contracts for Fecsa-Enher (Catalonia), Iberdrola (east coast and north) and Gesa (Balearic Isles), and the 400 kV live-line insulator cleaning works for REE, were also noteworthy in this sector.

In the environmental sector, special consideration must be given to the MV connection works, the supply and assembly of the T.C. and LV distribution network, for the Aguas de María de la Salud Water Consortium, on Majorca, and the changing of polychlorinated biphenyl (PCB) insulated transformers for dry transformers in Ford's factory at Almusafes.





In the industrial sector, we would mention the civil, electric and services works, in general, for the food industry with customers such as Sola Ricca, Frunexa, Harinera Villafranquina and El Pozo; for the automobile industry, with customers such as Ford, Peugeot, Citroen and Renault; for the electric energy industry with MV works and TCs at Pirelli's factory, in Villanova for the paper industry, with supplies and installations for Torraspapel; and for the oil industry, with customers such as Repsol and Cepsa.

In the transport sector, we would mention the works executed for AENA on the construction of the Gavá air-traffic control center's training, simulation and contingencies center, the commencement of the electric system works of the new terminal at Barcelona airport, and the enlargement of the powerhouse at Gran Canaria airport. In relation to high-speed, we would especially mention the commencement of the traction substation construction works on the Segovia-Valladolid section of track.

In the services sector, special mention must be made of the MV and LV electric and lighting installations on the Boadilla financial campus, for BSCH; the completion of the reformation works in the Larios shopping center, in Malaga; the electromechanical installations in Asepeyo's care center, in Seville; the new geriatric center in Espartinas, for Econivel; and the installation of the 1.3 MW photovoltaic plant for the Forum 2004 in Barcelona, and the Bilbao and Badajoz exhibition centers and the installations for Repsol headquarters at Tres Cantos (Madrid). Likewise, the execution of large projects for different Public Administrations were noteworthy, those that

are still being executed, such as the Health Campus in Granada, the Malaga City of Justice and the Almanjajar Building for the Regional Government of Andalusia, or new projects such as the design, construction and operation of an advanced digital services center for the El Toyo urbanization, and the city of Almeria, for the city's corporation under a 20-year concession modality.

### Railways

In the railway electrification sector, 1,500 and 3,000 V dc, and 25,000 V ac works were executed for the GIF high-speed network, for Renfe, as were electrification works on line 3 of Metro de Madrid, and electrification, communications and signaling works commenced on line 9 of Metro de Barcelona. Of special note are the contact-wire stringing works on the northwestern corridor of the Segovia-Valdestillas high-speed line; the installation of control and energy measuring equipment on the Madrid-Seville line; the suiting of the Zaragoza-Lerida high-speed line tunnels to European legislation, for the GIF; and the completion of the electrification works on the northwestern corridor Zaragoza-Huesca line, for the Ministry of Development.

Catenary modernization works were executed for Renfe in relation to the renovation of contact wires, hangers, energy supply and compensations on multiple sections of rail line and in many train stations.

### Mechanical Installations

In 2004, work was completed on the construction and commissioning of the bioalcohol storage, delivery



and supply system to the ETBE plant at Cepsa's refinery in Huelva, for Abener; the installation of equipment and piping for the cooling water system of Iberdrola's Arcos III CCPP and the utility air system at the same power plant.

We would also underline the mechanical assembly works carried out on the enlargement of Almendralejo compression station, for Enagas, and the mechanical assemblies and systems to enhance the gas oil blending process on project AFI 302 Ptº A, at Cepsa's La Rabida refinery.

Towards year-end, work commenced on the mechanical installation of pipes, the main process and ancillary services pipe racks, at Biocarburantes Castilla-Leon's bioethanol production plant, in Salamanca.

### Refractory / Insulating / Passive Fire-proofing Materials

The refractory activity continues to be very active in the petrochemical industry with different works being executed at Repsol's plants at La Coruña, Puertollano, Tarragona and Cartagena. We would underline the refractory lining of a cracking furnace for Technip, at Dow Chemical's plant, in Tarragona.

The most significant works in the insulating activity were the insulation of equipment and piping for the 900,000 Nm<sup>3</sup>/h enlargement of the liquid natural gas (LNG) plant at Palos de la Frontera, for Enagas, and at Lurgi's biodiesel plant in Caparrosa, for EHN, as well as the insulation of piping in the ETBE production plant, at Cepsa's refinery, in Huelva.

As regards passive fire-proofing, we would mention the completion of the fire-proofing of the new generation fuel plant at BP Oil's refinery, in Castellon and, the manufacturing, supply and installation of sectoring curtains for smoke evacuation in the event of fire, in BSCH's head office building, in Madrid.

### Instrumentation and Maintenance

In the energy sector, instrumentation works were performed for the 400 MW generating units for Iberdrola Generación, at its Arcos de la Frontera CCPP, in Cadiz, and the instrumentation of the BOP of the Aceca thermal power plant, in Toledo. Likewise, maintenance works were executed on power transmission lines in the southeast area, for Iberdrola, and electric and instrumentation works at Almaraz and Trillo nuclear power plants.



Of note in the industrial sector, the instrumentation works at the Sabiñánigo production plant, for Aragonesas, and the antibiotics plant in Leon, for Vitatene, as well as the maintenance works at Gepesa's Lexan 1 and Lexan 2 compounding plants, in Cartagena, at Cepsa's refinery in La Rabida, Enagas's plant in Huelva, and electrical installations at Ford España's factory and at the bioethanol production plant in Teixeira, for Bioetanol Galicia.

In the services sector, works continued on the integral maintenance of the Torre Triana installations for the Regional Government of Andalusia, and in the banking sector, mainly for Caja Madrid and Banco Santander.

### Manufacturing Workshop

In relation to the manufacturing of ancillary equipment for the electric industry, we would mention the manufacturing of 20 kV cabinets for the La Celaya wind farm, for Neg-Micon; the 6.6 kV cabinets, power panels and MCC for Unión Fenosa's Aceca combined-cycle power plant, supplied through Socoin; the 6.6 kV cabinets for Iberdrola's Arcos III combined-cycle; and the 6.6 kV / 40 kA cabinets, certified against internal arc in containers, for Alstom's three generating units at Gas Natural's Escombreras CCPP; and the 17 kV cabinets for the Peaker plant at Escatron, for Técnicas Reunidas.

As regards the manufacturing of MCCs, those for Enagas and Solar Turbine, to be installed at their gas compression stations in Cordoba, Alicante and Seville, and for the enlargement of CLH's I.A., in Barcelona, are noteworthy.

In the electronic manufacturing activity, we





mention the Metro de Bilbao automatic cashiers, validating and vending machines, for Euskotren; the Camu & Radio Rack equipment and pneumatic and electric test benches, for Eads-Casa; the manufacturing of tags and radio-frequency antennae for dynamic toll systems; the manufacturing of electronic cards for combat vehicles; and the manufacturing of electrocardiographs and city and intercity traffic control equipment.

### Abroad

In 2004, Inabensa's presence and activity increased abroad in accordance with the activities programmed in the Company's strategic plan. Among the most important activities carried out abroad during the year, we mention:

Work continued on the laying of the distribution network in San Jose, for the CNFL, and construction works commenced on Tabarca, Poas, Palmar, Cobano and Cahuita substations, for the Costa Rican ICE.

The construction and strengthening of the 225 kV TL for energy evacuation from the step, for the ONE, in Morocco; the construction of the 800 kV Sipat-Seoni TL, in India; works commenced on the construction of the 400 kV TL for Gecol, in Libya; the execution of the replacement of 3,000 km of guard cable with OPGW in Rumania, for Transelétrica; completion of the 90 kV Matam-Kaedi-Boghe TL works for Sogem, in Mauritania; and the completion of phase II and commencement of phase III of rural electrification works in Kenya, for the KPLC.

In the railway sector, we would mention the supply of a track polishing machine for the Tianjin Binhai Mass Transit Development of China; and the completion of the Basmane-Menemen-Aliaga and Alzacak-Cumaovasi electrification works in Turkey, for the TCDD, and commencement of the two-year maintenance period for these lines.

As regards mechanical installations activities, the successful completion and start-up of the 60,000 m<sup>3</sup> capacity oil product storage terminal at Nouakchott, in Mauritania, is of special relevance. In relation to electrical ancillary manufacturing, we especially mention the main control panels, remote shutdown panels, neutron monitoring panels and the sample-taking system for unit 2 of Lungmen



nuclear power plant, in Taiwan, for General Electric (GE); and the manufacturing of remote RTVs for the Steg project, in Tunisia; the LV board and MCC for the combined-cycle enlargement of Hermosillo Thermoelectric power planta at Mexico; and the equipping and supply of containers for GE gas turbine control in generating plants in Bangladesh, USA and China.

### Inabensa Maroc

In 2004, Inabensa's subsidiary in Morocco has grown significantly as a consequence of it having become the undeniable leader of the works being executed under the Rural Electrification Plan (PERG), for Oficina Nacional de Electricité (ONE), for which, at the close of the financial year, it was carrying out electrification works in more than 450 villages; upon it having greatly increased its participation in Meditel's mobile communications stations deployment plan, through it being awarded the turnkey construction of 81 sites; and on it becoming the main contractor for the Saidaia tourist complex, for Fadesa, to execute the complex's electric and communications installations, and water treatment and pumping networks.

To successfully carry out all these projects, Inabensa has added new regional offices in Agadir to its head offices in Casablanca and



regional offices in Tangiers, and invested in the construction of two concrete post manufacturing plants for rural electrification purposes, in Taourit (north) and Chicaoua (south).

### **Inabensa France**

During 2004, Inabensa France successfully carried out the works corresponding to the biannual 2003-2004 contract with RTE.

Under the framework of said contract, Inabensa France executed a total of 11 service orders on 63, 90 and 225 kV TLs, throughout the entire country. The works included the disassembly of supports, construction of new supports, changing of conductors and strengthening of towers.

Likewise, for Alcatel, it replaced 9 km of conductor cables and strung en-roulé cable on the 90 kV La Cobiére-Juigne TL.

At year-end, RTE extended the 2003-2004 biannual framework contract to Inabensa France for the whole of 2005.

### **Inabensa Bharat**

In 2004, Inabensa Bharat, Inabensa's subsidiary in India, in addition to continuing with the objective of Indian electric installations market management for Inabensa, gained direct entry to the same with Power Grid Co.

The works contracted directly by Power Grid Co. on the 400 kV Korba-Raipur TL were completed. Works also commenced on the construction of the 800 kV Sipat-Seoni TL for Power Grid Co., as an Inabensa works subcontractor.

For forthcoming years, Inabensa Bharat is Inabensa's strategic key to participation in new Asian markets, for which important commercial activities are already under way.

### **Inabensa Portugal**

A lot of commercial activity was undertaken in 2004, which led to the company being qualified as an authorized contractor for both REFER and REN, in the national railways and electric sectors. The year was brought to a successful end with ONI awarding the contract to install the PLC system on EDP's distribution network. The contract works will be executed in 2005.



### **Telecommunications**

Activities in the telecommunications sector are mainly focused on network integration and turnkey telecommunications projects.

In 2004, activity restructuring within the Business Unit was completed, with Abentel having concentrated this year on its classic external plant construction and maintenance activity, as well as on providing and maintaining loops and customer equipment. Under the latter activity, new products such as ADSL + PC and imagery (TV through ADSL) were developed.

On the other hand, Inabensa's telecommunications division focused 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 execution of the global contract (for 2002 to 2006) with Telefónica de España S.A.U., the volume of works carried out for the customer was greater than in the previous year, with increases in Barcelona and Alicante. This consolidated its leading position as regards contracted volume and implementation in provinces, with the company being active in a total of 10 (Alicante, Badajoz, Barcelona, Cadiz, Las Palmas, Jaen, Madrid, Seville, Tenerife and Valencia).

Furthermore, it kept its place among the best as regards quality levels throughout the year, scoring more than 6 points of the mean global contract. This was a consequence of the policy employed in the two previous years, developed and expanded this year, in relation to the achieving of high quality levels to the customers' satisfaction.

In this sense, we would emphasize the following activities:

Consolidation of the Integra Project, having been pioneers in the dispatching and fulfillment of work order activities, by mobile phone with GPRS technology. The system was perfected through the use of a GIA dispatch tool developed by Telefónica. Its use was not limited to the maintenance activity this year, but was extended to the entire DSL activity. Continuation of improvement teams, formed by people from different levels and specialties who analyze the processes and improvement opportunities. As a consequence of these activities, improvement actions are implemented, objectives established and their results followed up on. During the year, these groups were introduced to 6 Sigma technology, with a total of twelve projects being executed in all of Abentel's regional offices, and a considerable number of persons in its organization structure were trained to "Green Belt" level. Thanks to these projects, almost 70 improvement actions were proposed.

Fault dispatch centralization and globalization, with a single work distribution center (WDC) for all the activities and entire country. The WDC has been given responsibility for supervising and diagnosing the tests carried out on the works performed by the experts. Our call center was also kept in operation. This is where the calls from the experts are attended to and the customers' opinions sought in relation to the works carried out.

The consolidation and extension of the Plan Optima to all the regional offices and activities. This commenced the previous year with its customer and has produced higher levels of efficiency – productivity and quality – in the ADSL activity, taken as a reference.



Collaboration, again with its customer, on some pilot plans in relation to quality, such as the one it is currently participating in, on the testing of RDSI lines.

More than 100 people contracted to increase the number of in-house technicians and management personnel, mainly in Madrid, Barcelona and DCA.

The number of scheduled training hours tripled, for technical personnel, as well as for employees and management personnel.

Likewise, in 2004, the cable operator department continued to execute supply works for Auna, in Madrid and Andalusia, and commenced the same activity in Catalonia towards year-end.

During the year, the Quality Certificates were kept updated in accordance with Standard UNE-EN ISO 9001:2000, and the Environmental Management Certificate in accordance with Standard UNE-EN ISO 14001:1996, which includes all the regional offices. Moreover, the process to certify the Occupational Risk Prevention Management System in accordance with the OHSAS 18001:1999, commenced.



### Inabensa's Telecommunications Division

We especially mention, for the railways sector, the installations for the GSMR system on the GIF's Lerida-Barcelona and Madrid-Seville high-speed lines, for Siemens España, and the construction of operator sites on the GIF's Madrid-Lerida line.

Likewise, of special note are the works carried out on the implementation of the PLC system on Endesa Net Factory's and Iberdrola's distribution networks; the development of Vodafone's management system software; the mobile-phone site mimetization works for Amena-Auna; and the supply, installation and commissioning of Nueva Generadora del Sur's communications system in Gibraltar, for Siemens AG Alemania.

### Commercialization and Ancillary Manufacturing

In 2004, the company maintained its leading position on the home market as a supplier of electric, instrumentation and communications equipment in the chemical, energy, telecommunications and industry sectors.

The business structure, based on its vocation for service and the providing of the highest possible quality, has enabled us to maintain a stable presence in our normal markets and to identify and exploit the opportunities offered us.

Under our growth strategy, we strengthened our presence on international markets, and our subsidiaries in the United States, Mexico and Argentina more than met the planned objectives.

Moreover, we are promoting the execution of turnkey projects and developing new services such as purchase logistics and storehouse outsourcing. In relation to the latter, we would mention the management of stores for Endesa, REE and Repsol Butano.

### Nicsa

Nicsa exceeded its established objectives for 2004, and maintained its leadership in Spain as a supplier of electric, instrumentation and communications equipment for the chemical, petrochemical,

refineries, combined-cycle, nuclear and thermal power plant sectors, and the heavy industry in general.

As regards growth strategy, a definitive drive was given to the internationalization of the activity, with two new subsidiaries being established, one in Mexico - Nicsamex S.A. de CV, and the other in Argentina - Nicsa Suministros Industriales S.A.

Among this year's most important references, we mention the following:

Signing of a framework agreement with Repsol for the supply of medium and low voltage electric cables for all its production centers.

Supply for Repsol Ypf, hydro-treatment plant (HDT) for loading to FCC at La Coruña, of grounding material, conduits, electric cables, direct current panels, lighting material and bus-bar conduits.

Supplies for Enagas on its main projects: enlargements of the plants at Cartagena, Barcelona and Palos (Huelva).

Framework agreement with Cepsa to supply electric and instrumentation material. Participation in, among others, the following projects: Nafta HDT Unit of FCC, in Huelva; Nafta SHU in Algeciras; HDS 1 in Huelva and Algeciras; and Revamping of H3, AZ3 Sulfur Plant, and LPG amines plant on Tenerife. The materials included under the framework agreement are: medium and low voltage electric cables, instrumentation cables, lighting equipment, handling stations, conduit boxes, trays, junction boxes and glands.



Supply of cables, bar pipes, trays and conduits for the combined-cycle plant AES (AES Joint Venture) is constructing at Cartagena.

Supply of cables to Intecsa Uhde for its olefins and derivatives plant project, for Pars Petrochemical Co., in Iran.

Of the subsidiary-executed contracts, we mention that carried out by the subsidiary in Mexico for Dragados Offshore and Sice, EPC 60 project, to adapt and modernize the Akal G and Akal GR platforms and the construction of the new Akal G1 four-legged platform, for Pemex, where the following materials were supplied: lighting, navigation support system, intercommunication and public address system, grounding equipment, conduits and accessories, cable, junction boxes, glands and lighting boards.

The promotion of turnkey project execution continued, with the following being the most significant:

Communications systems and structured cabling: for Técnicas Reunidas at Granadilla de Abona CCPP and for Enagas at the compression station in Cordoba.

Lighting: for Técnicas Reunidas at Granadilla de Abona CCPP, and for CHL/ Diseprosa at Monzalbarba TPP.

Bus-bar conducts: for Solucionera at Palos CCPP, and Repsol Ypf at the hydro-treatment plant (HDT) for loading on FCC at La Coruña.

During the year, the quality certificates were renewed in accordance with standard UNE-EN ISO 9001:2000, and the certifying process of the Occupational Risk Prevention System, in accordance with OHSAS 18.001:1999 specification, commenced.

### Abencor

During 2004, Abencor consolidated its presence in the sectors in which it traditionally carries out its activities: energy, transport, railways and telecommunications.

The energy market was the basis for the year's sales, especially through the supply of power transformers (dry and oil insulated), meters, automatic valves, glass and polymer insulators, and naked and insulated cables. In the railway transport market, the supply of catenary contact wire and of transformers was developed and, in the telecommunications sector, the

basis was the supply of cables for network deployment. Different installer companies were our direct customers for some of these supplies, and they so purchased some cable laying/stringing equipment.

The following are the main supplies made or contracts executed in 2004:

Oil-insulated power transformers for Fecsa – Enher – Endesa.

Auto-transformers for ERZ – Endesa.

Aluminum alloy cable for Sevillana – Endesa.

Supply of a 12 MVA encapsulated transformer, for Viesgo Generación.

Supply of meters for Iberdrola.

Supply of meters for Unión Fenosa.

Replacement of oil-insulated transformers with other encapsulated ones, for Telefónica.

Supply of power and communications cables for the deployment of Auna's network.

Supply of cable for the contact wire and supporting wire to Elecnor, for several works for RENFE.

Supply of 120 Cu Ag contact wire for the Atocha – Chamartin Tunnel joint venture formed by Elecnor and Electrén.

Supply of cable laying/stringing equipment for Inabensa, Semi and Elecnor.

Supply of luminaries to Inabensa for the El Pozo factory, in Murcia.

On the other hand, the outsourcing process was



consolidated for Endesa's stores on the Canary Isles, at Santa Cruz on Tenerife as well as Las Palmas on Gran Canaria, which had commenced activities in the second half of the previous year.

Abencor is directing its activities towards new markets, especially in the renewable energies sector. In the development of new lines of activity, it supplied photovoltaic solutions in Extremadura and the Canaries.

Quality and environmental commitment are fundamental objectives of its activity. Abencor's quality system is certified according to standard UNE-EN ISO 9001:2000, and it covers all its work centers, its head offices as well as main stores, in Seville, and its regional offices in Madrid, Barcelona and Bilbao. Likewise, it holds the Environmental Management Certificate in accordance with standard UNE-EN ISO 14001:1996 for all the aforementioned centers.

Furthermore, work has commenced on obtaining the Occupational Risk Prevention Certificate (workplace safety and health assessment) in accordance with the OHSAS 18.001:1999 specification.

Towards the end of 2004, the company undertook a new customer group organization process, which will come into operation in 2005. The commercial activity is being organized into four divisions: energy, installers, communications and, finally, environment, industries and alternative energies, each one specialized in attending to the corresponding market. The aim is to mold the company's structure to the sectors in which it operates to specialize in what its customers demand and adjust the functions of each work station to meet objectives, through customer service. Moreover, the aim is to specifically develop, providing the necessary means, certain lines of product with important perspectives for the future.

### Eucomsa

During the year, Eucomsa was affected in the export market by the continued devaluation of the dollar which reduced the exporting activity. In spite of this, towers were supplied to different customers and countries, such as the exports to Ireland, Nigeria, Portugal, Sweden and Argentina, among others.

In the structures division, the company maintained its leading position on the home market with the country's main customer (REE) for the products it is



specialized in – structures for electric energy transmission lines and substations. Towers were supplied for the 400 kV Balboa-Portuguese Border, Almaraz-Guillena and Escombereras lines, as well as substations such as Torrearenillas, Nueva Escombereras, Guillena, Olmedo and Olmedilla. The plate division continued its policy of signaling market penetration. Manufacturing and sale of





aluminum signals is operative and the luminous signals activity is being further developed. Likewise, optic fiber divider cabinets continued to be manufactured for Telefónica, in Spain as well as Argentina, and for different national operators. An important milestone in the year was the completion and start-up of the tower testing station that employs state-of-the-art technology. Towers of heights up to approximately 70 m can be tested in the station. Test control and the recording of each of the stresses applied to the tower are computerized. The station is at the vanguard of the few existing stations worldwide for the carrying out of these types of tests. Towers from the standardized catalogue have been tested; a tower for mobile-telephones and two towers for Abemex, destination Mexico, and additional tests are to be carried out on towers for REE, destined for Morocco.

In addition, Eucomsa adapted its Quality System to version ISO 9001:2000 and also commenced the Occupational Risk Prevention Certifying process in accordance with the OHSAS 18.001:1999 specification.

