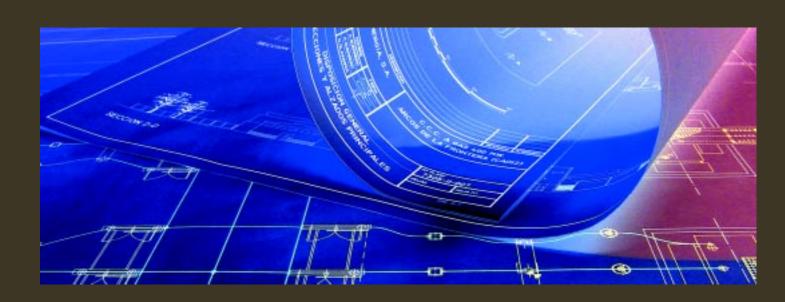
• Engineering, construction and maintenance of electrical, mechanical and instrumentation infrastructures for the energy, industrial, transport and service sectors. Development, construction and operation of industrial plants, conventional power plants (cogeneration and combined cycle) and renewable energy facilities (bioethanol, biomass, wind, solar and geothermal). Turnkey telecommunications networks and projects.



### **Energy**

In 2002 two very important and technologically complex projects were successfully completed: operations commenced at the La Coruña bioethanol plant, which is the largest facility constructed in Europe to produce bioethanol, which is an alcohol manufactured by fermenting cereals and used as a biofuel, and at the Sangüesa EHN straw (biomass) fuelled power plant in Navarre, the second to be built in Europe. These projects have been key to consolidating technological innovation in this area and provide a solid basis for new projects that will be undertaken this year and in coming years.

We also continued our work in the area of power generation plants, mainly in Spain and Latin America. Particularly important undertakings included repowering and combined-cycle projects in Mexico.

#### **Abener**

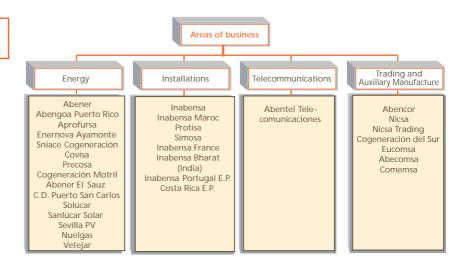
The most significant projects carried out by Abener in 2002 include the following:

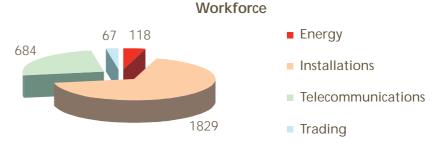
#### La Coruña bioethanol plant

Abener completed a bioethanol production plant in Teixeiro, La Coruña, for Bioetanol Galicia, S.A., and the provisional acceptance certificate was issued in November 2002.

This is the second bioethanol plant that Abener has constructed in Spain and the largest in Europe. It was delivered as a turnkey project, covering all the work required from basic engineering to commissioning and performance testing and including detail engineering, construction and start-up.

The project also contributed to strengthening Abener's leadership position in the design and construction of plants that use cereals as a feedstock to produce bioethanol, which is used as a fuel. The main features of the plant are:





Total (31.12.02): 2698

- Ethanol production: 126 million litres/year (15.750 litres/hour)
- Production of DDGS (animal feed): 144 million kg/ year (18,000 kg/hour)
- Power generation: 200,000 MWh/year

### Straw-fuelled power plant in Sangüesa, Navarre

Abener, as part of the consortium Abengoa-FLS Miljo, delivered a biomass-fuelled power plant as a turnkey project for the company Energía Hidroeléctrica de Navarra (EHN) in Sangüesa, Navarre. This is the first plant of its kind to be built in Spain and the second in Europe. The feedstock used is cereal straw, although the plant is also designed to operate on a fifty-fifty mixture of cereal straw and low-quality wood.



Noteworthy features include the state-of-the-art biomass handling and control technologies incorporated in the plant and the unique design of the buildings constructed to house the facilities.

The period of uninterrupted operation preceding provisional acceptance is now coming to an end, and over 51 million KWh have been fed into the grid.

The main features of the plant are:

- Power generation: 216,000 MWh/year
- Biomass consumption: 160 million kg/year (20,000 kg/hour)

Repowering of the El Sauz thermal power station combined cycle to 450 MW

In order to meet increased demand for electricity in Mexico, Abener Energía-El Sauz, S.A. de C.V. (Aelsa), a subsidiary wholly owned by Abener, is currently implementing a turnkey project for the Federal Electricity Commission (CFE) of Mexico to extend the combined cycle of the El Sauz thermal power station situated in the municipality of Pedro Escobedo in the state of Querétaro.

The main purpose of the project is to convert two existing gas turbine units (Siemens-Westinghouse) into a combined-cycle unit, adding a guaranteed net capacity at alternator terminals of 143 MW. In order to achieve this, the exhaust gases from the two gas turbines will be channelled to two new heat exchangers. The steam produced will be primarily used to drive a new steam turboset to produce electricity. In addition to these systems and functional units, the new steam cycle will also be fitted with all the mechanical, chemical, ancillary and electrical systems necessary to ensure that it operates as required and to protect the main units.



This project, which was begun in August 2001, with the first synchronisation scheduled for the summer of 2003 and provisional acceptance by CFE for the early autumn of 2003, has significantly strengthened Abener's position in Mexico in the thermal power station sector.

### ETBE plant in Huelva

The company ETBE Huelva S.A., formed by Cepsa (10%) and Abengoa (90%), has signed a contract with Abener for the turnkey construction of a plant at Cepsa's refinery in La Rábida (Huelva) designed to produce 34,028,000 kg/year of ETBE, a compound used in petrol as an anti-knock additive instead of lead

The ETBE production process is based on the etherification reaction between isobutylene and ethanol in the presence of a catalyst. The Cepsa refinery will provide all the utilities required for the production process (electricity, steam, water, etc.).

The plant will be built on a 400 m2 plot of land adjacent to the refinery's FCC.



Abener designed the plant with the help of the Finnish engineering firm Fortum, which has the best track record in this area worldwide.

Provisional acceptance is scheduled for the second quarter of 2004. The main features of the plant are:

ETBE production: 34,028 T/yearButane consumption: 123,270 T/yearEthanol consumption: 15,372 T/year

### **Nuelgas**

Nuelgas is a company in which Abengoa has a majority interest and which operates in the hydrocarbon exploration and exploitation sector.

Nuelgas currently has three electricity-generating plants in operation with a total power output of 12 MWe. Two of the plants, Las Balbuenas and La Viñuela, which have a power output of 3 MWe each, are at the concessions El Ruedo-1, El Ruedo-2 and El Ruedo-3. Las Balbuenas is located in Écija, and La Viñuela in Fuentes de Andalucía, both in the province of Seville, and they are supplied by production from the Córdoba C-1A and Córdoba B-2 wells. The third plant, located at the Las Barreras concession, has a power output of approximately 6 MWe and is supplied by the San Juan V-1 (Seville) and San Juan V-6 (Camas) wells.

Nuelgas acquired a 5% interest in the prospecting licences for Cameros 1, 2, 3 and 4. The Cameros 1 well, situated in the Cameros and Demanda Sierras in the La Rioja region, was drilled to a final depth of 4,300 metres. Poor results led to the well being sealed and abandoned.

Following the analysis of the data from prospecting and exploration activities undertaken in 2000 and the drilling campaign carried out in 2001 at the Marismas B-1, Marismas C-1, Marismas C-2 and Rebujena operating concessions, the required investments were made to put the La Cerca well, located in the municipality of Aznalcázar (Seville), into production.



The results of seismic and vibration testing conducted in the last quarter of 2002, covering 28 kilometres at the operating concessions El Ruedo 1, 2 and 3, is currently being analysed, with a view to locating and defining a hydrocarbon structure conforming to the geological concept of the Guadalquivir sands.

#### Installations

The results achieved in this area exceeded targets set for 2002. This successful business management was largely due to the balance achieved between traditional activities and new ones carried out in technologically advanced sectors affording the company high growth prospects for the future.

The ongoing quest to improve the efficiency of production processes and cut costs in the sector of industrial installations and infrastructures and in manufacturing has enabled Inabensa to build up a competitive advantage and a leadership position in these markets, maintaining the highest customer qualifications.

There was a sharp increase in the volume of contracts won in 2002, which exceeded the 300 million euro mark. There were a substantial number of foreign contracts, and we participated in important projects in France, Romania, Macedonia, Costa Rica, Morocco, Nigeria, Mauritania, Tanzania, Kenya, Turkey and India. As a result, exports accounted for 30% of total revenues in 2002



A firm commitment to activity in emerging markets and plans to participate in important national and international infrastructure projects will shape the immediate future of our business, carried forward by a highly qualified, experienced team of people and technical and financial resources that are continuously adapted to meet market needs.

#### Inabensa

Inabensa's expansion drive continued along the same lines as in recent years.

Significant projects carried out in Spain include the following:

Construction of VHV, HV, MV and LV lines and substations for REE, Unión Fenosa, Hidrocantábrico, Iberdrola, Electra de Viesgo and Endesa (for ERZ, Fecsa-Enher, Gesa, Sevillana and Unelco).

Replacement of OPGW and FOADK optical ground wire on the HV networks belonging to Iberdrola, REE and Endesa. 200 kV double-circuit duplex line between the substations María and Los Vientos for Endesa, Campoamor 132 kV line for Iberdrola, Trillo-Calatayud 400 kV line and second circuit on Litoral-Rocamora and Cartelle-Lindoso 400 kV lines for REE. Replacement of conductors on Benidorm-Jijona, Vilanova-Gandía, Teulada-La Nucía and Jijona-La Nucía 132 kV lines for Iberinco.

Installation of San Sebastián de los Reyes-Loeches-Morata 400 kV underground line as part of Aena's Barajas Plan for REE. Laying of VHV underground cabling and remodelling of the River Besós course HV network, Nus de la Trinitiat, for the temporary consortium General Cable-Pirelli, and the Bellisens-Basf VHV line for Pirelli.

For Madrid Infraestructuras del Transporte (MINTRA): design, supply and installation of traction, electrification and distribution substations for line 10; rectifier substations at the Cuatro Vientos coach yard and on line 10B Batán-Alcorcón; Torre





Arias substation and ventilation on line 8. For Metro de Madrid: station transformer units and power distribution on the sections Móstoles 1-Fuenlabrada 1, Fuenlabrada 2-Getafe 2, fire protection systems on the Getafe 7-Getafe 2 section, ventilation on the Móstoles 1-Fuenlabrada 1 section and power control on Fuenlabrada 2-Getafe 2 section.

For Aena: civil engineering works at the new Barajas power stations CE-1 and CE-2 and new air traffic control centre at Gavá (Barcelona), two projects carried out in temporary consortium; new alternative technical building at the Gran Canaria Contingency Centre; works and installations for the remodelling of the electric power station at Barcelona airport; and the supply and installation of a 1,000 kVA generating set at Alicante airport.

Projects carried out in temporary consortium with other companies include the new Hospital Campus de la Salud in Granada; the new justice complex in Malaga; LV installations at the new SCH financial campus in Boadilla del Monte (Madrid); electrical and other special installations at the new trade show centre in Bilbao, the new local police station in Huelva; work to improve and extend the municipal Chapín Stadium in Jerez de la Frontera to host the World Equestrian Games 2002.

Installation of a fluidised bed boiler, steam turbine, ancillary equipment and piping system at the Sangüesa biomass plant (Navarre) and the Teixeiro bioethanol plant (La Coruña) for Abener.



Construction of a bascule bridge over the Estacio canal in San Javier (Murcia).

Maintenance and electrical and instrumentation installations at the compounding plants Lexan I and Lexan 2 in Cartagena for General Electric Plastics España, at the La Rábida refinery in Huelva, for Cepsa, and at the Palos de la Frontera plant also in Huelva for Enagás.

For RENFE: work to change the electrification system from 3 kV DC to 25 kV AC 50 Hz on the Madrid-Seville high-speed train (AVE) line at Puerta de Atocha station in Madrid and Santa Justa station in Seville; work to modernise the overhead contact line on the following sections: Puente Los Fierros-Soto de Rey at Mieres station, Busdongo-Puente Los Fierros on the León-Gijón line, Guipúzcoa local train side on the Madrid-Hendaye line and Las Mellizas-Malaga on the Cordoba-Malaga line.

Railway project for work on the Jerez de la Frontera urban track layout for Consorcio Urbanístico de la Zona Ferroviaria de Jerez.

MV cubicles, motor control centres and LV switchboards were manufactured for the combined-cycle power stations in Tarragona, Granadilla in Tenerife and Son Reus in Palma de Mallorca, for Endesa, and in Castejón, for Iberdrola.

MV cubicles for cogeneration plants in La Rinconada, Motril, Peña Forcada wind farm, the CLH pumping station in Torrejón, Madrid, and the smoke desulpherisation plant in Tarragona; extension work



on the LNG terminal in Cartagena, the Cepsa refinery in San Roque, the Ford plant in Almusafes and the nuclear power station in Almaraz.

Significant projects carried out abroad include:

Power substations and networks to supply the city of San José, Costa Rica, for Compañía Nacional de Fuerza y Luz, S.A. (CNFL).

Civil engineering work, supply and installation of the 230 km long Raipur-Kanaktura 400 kV double-circuit line on India's east-west transmission system for the Power Grid Corporation.

Engineering, supply and installation of rural electrification equipment, phase 2, for the Kenya Power & Lighting Co. Ltd. (Kenya).

Design, engineering, supply, installation and commissioning of the Izmir 25 kV AC railway line between Basmane-Menemen-Aliaga and Alsancak-Cumaovasi for the Turkish State Railways (TCDD).







Petroleum complex in Mauritania: berthing dock, piping systems and storage tanks for the Mauritanian Ministry of Hydraulics and Energy.

Engineering, supply, installation and commissioning of the 230 kV Nouakchott and Rosso substations and the 90 kV line between Matam and Kaedi. Extension of the Kaedi-Boghué section on the Mauritania-Senegal interconnection for Sogem/OMVS.

Manufacture of MV cubicles, motor control centres and LV switchboards for the Naco Nogales coal power station in Mexico, MV cubicles for the El Sauz repowering project in Mexico and a control simulator for the Lungmen nuclear power station in Taiwan.

#### Inabensa Maroc

Two contracts for the Office National d'Electricité (ONE) to provide rural electrification for 74 villages in the north of Morocco, forming part of the PERG programme, were completed in 2002, and a further four rural electrification contracts, worth 70,989,419 Dhm, were awarded to the company.

On the national market, the volume of contracts won by Inabensa Maroc in 2002 has placed the company among the top five in the sector.

Phases 4, 5 and 6 of the mobile telephone network were successfully completed, and work has started on phases 7 and 8 to construct rural and urban GSM mobile telephone sites through Siemens AG for Meditelecom. There are currently

89 greenfield and rooftop sites in operation, and a further 28 are under construction. It is expected that Meditelecom's main target will be met within the period of a year.

The company has diversified into other activities. One example is the MV/LV electrical installations at the new Spanish embassy in Rabat for the construction company OHL.

#### **Protisa**

Protisa continued to expand its traditional activities of thermal and acoustic insulation and the installation of refractories and passive fire protection in industrial sectors where it has already built up a strong position, such as the petrochemical industries, refineries, thermal power stations, combined-cycle power stations, incinerator plants and other industries where heat and noise proofing is required.

The most significant projects carried out in 2002 include:

 Supply and installation of refractory lining to optimise the performance of the urban solid waste energy recovery plant in the municipality of San Adrián del Besós, Barcelona.



- Thermal insulation for the 32 diameter observatory dome for Observatorio de Gran Telescopio de Canarias, S.A. The insulation was installed on site using rock wool and aluminium sheeting insulation panels, including observation flaps and sliding shutters.
- Thermal insulation and passive fire protection for four LPG spheres at the Cepsa refinery in La Rábida (Huelva), using cellular glass and Sprayfiber-V mortar manufactured by Protisa in Alcalá de Henares



Developments in the communications sector have generated a demand for new services in more innovative areas and led to a fall in the demand for more traditional services.

Our ability to carry out integrated projects, covering everything from design and basic engineering to the creation of infrastructures and maintenance has enabled us to build up a strong market presence in these new areas.

The development of advanced management systems and the use of new technologies should result in new lines of diversification and improved competitiveness in traditional areas. Activities in this sector were marked by the negotiation of a new contract with Telefónica de España, which came into force on 1st March 2002.

Abroad, we won our first contract with Andinatel in Ecuador and have strengthened our position in Portugal and Mexico.

#### **Abentel**

Abentel's performance was affected by the deepening recession in the telecommunications sector, as the effects of the crisis situation already felt in 2001 continued into 2002. As a result, operators fell far short in implementing their initial investment plans, forcing the vast majority of companies operating in this sector to adapt the conduct of their business to the new situation.



The start of the year was marked by the negotiation process for the new contract with Telefónica de España, which came into force on 1st March 2002. The way we approach this area of business underwent a significant change in response to the introduction of a number of new features, including:

- A single mix price for lines, cables and residential set by combining previous prices and volumes in each segment, thus maintaining the average price and associated billing, at least in approximate terms
- The contract expires on 31st December 2006 and therefore has a longer term than the previous one.
- A variable billing scheme (positive or negative), proportional to basic billing, is established according to a formula linked to quarterly qualifications, made on the basis of a set of indicators defined by Telefónica de España.



The new contract gave Abentel, which will cover ten provinces, an increased share, making it the company with the largest proportion of the award.

In 2002 work continued on the Integra project, which began the previous year. One of the most important innovations included in the project is that service orders are dispatched and carried out using mobile telephones with GPRS technology, which is a completely new development in the sector.

Improved quality and productivity achieved through the effective use of all the tools perfected in this project and the redefinition of associated processes have proved to be a key factor in dealing with the new contractual system described above.

We continued to carry out various types of work for fixed and cable operators, such as Jazztel, BT, Supercable, Madritel, etc., to provide integrated services for network deployment. However, as a result of cutbacks in the sector, the volume of works awarded in general is lower than in previous years.

Work on the TyCom contract to condition the switching nodes of its fibre optic trunk network deployed in the Iberian Peninsula neared completion in 2002.

Activities in the mobile telephony sector continued with work performed under contracts already in force for the construction of mobile telephony base stations for Amena and the supply and installation of radio link equipment for Vodafone



At the end of 2001, Abentel began to study and become involved in the issue of radio emissions from mobile telephony base stations, discussing the technical aspects with operators, analysing experiences in this area, participating in specialised conferences and, subsequently, carrying out pioneering work in making experimental measurements in Spain. We used a measuring procedure specifically designed for this purpose by our Radio Department, which made an essential contribution to the final definition of the official procedure adopted by operators. Once the relevant regulations had been passed, a project was set in motion in January 2002 to certify base stations, in which Abentel cooperated closely with the current mobile telephone operators, taking measurements at over 1,300 stations for Telefónica Móviles, Vodafone and Amena.

We also continued to implement the RTDI projects started the previous year, focusing efforts on the completion of the Integra Project mentioned above

Abentel continued its operations abroad in 2002. It won its first contract with Andinatel in Ecuador and is working on interesting opportunities in other countries including Portugal and Mexico.

### Marketing and manufacturing

We have maintained our leadership position in the Spanish market as suppliers of electrical, instrumentation and communications material and equipment in the chemical, energy and telecommunications sectors and in heavy industry in general.

One of the mainstays of our growth strategy is to build up a strong position on international markets—our subsidiary in the United States, Nicsa Trading Corporation, exceeded targets set for the year—and we are currently focusing efforts on turnkey projects and new services, such as procurement logistics and warehouse outsourcing. Important developments in this latter area include warehouse management services for Endesa, REE and Repsol Butano.

#### Nicsa

Nicsa exceeded the targets set for 2002, strengthening its national leadership position as a supplier of electrical, instrumentation and communications materials to the chemical and petrochemical industries, refineries, combined–cycle power stations, nuclear power stations, thermal power stations and heavy industry in general.

The most significant projects carried out in 2002 include:

- Técnicas Reunidas. Marshal Daran Petrochemical MP PC Co. linear alkylbenzene plant. Kermanshah, Iran
- Técnicas Reunidas. Endesa, Tarragona 1,400 MW combined-cycle thermal power station.
- Temporary consortium Cobra, Ghesa, Gamesa, Iberdrola: Castejón 400 MW combined-cycle thermal power station.
- Temporary consortium TIS (Tecnigaz-Initec-Sofregaz), BBG: regasification plant, Bilbao.

An important framework contract was signed with Cepsa for the supply of electrical and instrumentation materials both for new projects and the maintenance of its production facilities.

One of the main pillars of Nicsa's growth strategy is the internationalisation of its activity, and our subsidiary in the United States, Nicsa Trading Corporation, also exceeded targets set for the year. The most significant projects carried out in 2002 include:

- Dragados Off-Shore. Pemex Exploración y Producción. Platform AKAL L (IPC 78 B).
- Intecsa Uhde. Repsol YPF Ecuador. Extension of facilities. Block 16

In 2002 we also opened a new branch of the company in Mexico.

Efforts were stepped up to develop Nicsa's capacity to execute projects including design, supply, installation and commissioning. The most significant were:

- Communications systems and electrical tracing for the combined-cycle thermal power station in Castejón, Navarre.
- Electrical tracing for the Lexan II plant belonging to General Electric Plastics in Cartagena, Murcia.
- Lighting towers for CLH in León.

#### Abencor

In 2002 Abencor focused efforts on increasing its market share in its traditional business of supplying materials and on providing procurement logistics and warehouse outsourcing for various companies who have entrusted these services to us.

Important warehouse outsourcing activities included the start-up of operations at the warehouses we manage for Endesa in Seville and Malaga and the warehousing of certain products for Red Eléctrica de España, S.A. New customers in this area include the companies Telvent and Abentel. An interface linking the customer's system to ours enables customer databases to be directly updated.







Our traditional business objective in 2002 was to broaden the range of products we offer to our customers as a means of building up a stronger market position. Significant additions to our offerings in the transport sector include catenary contact line, line sectionalisers for railways, encapsulated transformers (around fifty sold in the first year) for traction, distribution and rectification and mineralisolated cable permitting power transmission in the event of fire even at temperatures of over 1,000°C. In the energy sector we have incorporated or promoted various product offerings for substations, particularly oil-immersed and dry power transformers, measuring and protection transformers, weatherproof switches and submersible isolators.

This policy was extremely successful in increasing business, with the volume of contracts won in 2002 rising by 50% compared with 2001.

The most significant contracts won in 2002 include the supply of power transformers to various Endesa companies, cables and isolators to Inabensa in Costa Rica and encapsulated transformers to Metro de Madrid.

Work continued to further develop the TIRO project as a web management software system, allowing customers who sign up to check the situation of their orders and supplies, and suppliers to check on tenders and invoices online over the Internet.

Abencor renewed the quality certificate ER-371/2/95 that it has held since 1995 up to 2003, and its environmental management certificate CGM-01/106 up to 2004. Both certificates cover all the workplaces operated by the company.

#### Eucomsa

Important export contracts were carried out in 2002, including the supply of towers for the transmission line project LT 411 in Mexico for Abengoa México and Elecnor and for the Ralco Project in Chile for Abengoa Chile.

The supply contract was executed in cooperation with Comemsa (a company also belonging to the group), enabling it to carry out its first export market operation.

Another significant supply contract was awarded to Eucomsa by the Portuguese company CME for 400 kV towers. Design engineering and tower testing was also provided for the LT 411 project.





In France, we were qualified as a supplier to the country's power transmission network company, RTE. We passed the audits satisfactorily, and two orders were placed with us and delivered in 2002. As a result of this process, we were consulted as suppliers for the biennial supply contract, after receiving the framework contract for continued supply during that period at the end of the year.

We have produced substations for various customers in other countries, including Sweden, Cyprus and Panama.

In the Spanish market, we continued to be REE's biggest supplier both for towers and substations. The framework tower supply contract has now expired, and we are now awaiting the announcement of the new biennial plan to cover REE's needs in this area in the period from 2003 to 2004.

Our Steel Sheet Division maintained its level of activity in the manufacture of important products including the fibre distribution frame cabinets that we supply to Telefónica and other Spanish operators, automatic teller machines for Fujitsu and customary supplies for the traffic and road sign market.

One of Eucomsa's key strategic objectives is to be the leading tower manufacturer nationally. In Mexico, it continued efforts to strengthen the company it holds shares in, Comemsa, which has now become the most reputable and reliable tower manufacturer in the country. Comemsa has increased its production to more than cover the needs of the Mexican market, enabling it to turn its attention to other important markets, such as the US.

Another strategic objective in the structures sector is the construction of a tower testing station in 2003 on our Utrera plant site in Seville. The permits and licences required to set up the station have already been granted. This move will enable us to present a more comprehensive image, encompassing design and detail engineering, the manufacture of structures and real-life testing.

### Solar Power and fuel cells

The drive to develop new solar power products has been consolidated with the creation of specialised companies. Steps to obtain permits, licences and financing (in the form of project finance) and design and basic engineering are now nearing completion, and work on the construction of a 1.2 MW photovoltaic plant with 2x solar concentration and a 10 MW solar thermal power station is scheduled to start in 2003.

#### Sanlúcar Solar, S.A.

The purpose of this company is to design, construct, operate and maintain a solar power plant designed to produce and sell electricity, operating as a production facility under the special electricity regime.

The engineering work was practically finished in 2002, most of the required permits have been granted and negotiations are underway with banks to obtain the financing required to build the 10 MW solar tower technology plant in Sanlúcar la Mayor (Seville).





#### Sevilla PV, S.A.

The purpose of the company is to design, construct, operate and maintain a photovoltaic power plant designed to produce and sell electricity, operating as a production facility under the special electricity regime.

In 2002 the engineering work began and applications were made to obtain the licences and permits required for the construction of a 1.2 MW photovoltaic plant with 2x solar concentration and dual axis tracking. Negotiations with financial institutions are already underway to obtain the required project financing.

