

## Eólica de Composites, S.A. (ECSA)

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In July 2010, management at Eólica de Composites, S.A. (ECSA)<sup>1</sup> had to decide where to locate a new plant. ECSA manufactured a wide variety of metal and composite<sup>2</sup> parts for the aerospace, automobile, public lighting and farm machinery industries. Turnover that year was expected to reach 141 million euros (see **Exhibits 1 and 2**).

### The Plants

The company had three plants, all three in the region of Aragón in Spain. The main plant and head office were located in an industrial park in the regional capital, Zaragoza, an industrial city of around 650,000 inhabitants. The two satellite plants were located in small agricultural towns, each with around 5,000 inhabitants, close to the towns of Alcañiz and Calamocha, approximately 100 km from the main plant (see **Exhibit 3**).

The main plant had a floor area of 25,000 m<sup>2</sup> and was equipped for stamping, drilling and similar operations, as well as assembly. It had 500 employees, most of whom belonged to one of the two national unions, which had been the plant employees' only representatives in collective bargaining since 1985. Industrial relations in the company had been satisfactory until March 2010, when a wage strike shut down the main plant for three weeks. Although the employees returned to work with a new one-year wage agreement, management was unsure that the issue had been fully resolved, as the union had said it was not entirely happy with the deal ECSA's two subsidiary plants had a floor area of 8,000 m<sup>2</sup> each and were equipped mainly for automatic machining operations. Although the subsidiaries manufactured some finished parts that were

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<sup>1</sup> All data have been disguised to protect the company's identity.

<sup>2</sup> Composites, or composite resins, are materials derived from raw materials which, when mixed, give the resulting compound certain mechanical properties that are superior to those of the original materials. They have been used since the mid-20th century in various industries, including aerospace, prostheses, naval and civil engineering, etc.

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shipped directly to customers, most of the parts they produced were sent to the main plant for further processing and final assembly. Each subsidiary plant had 150 employees, who did not belong to any union, although attempts had been made to unionize them.

## Decentralization of Manufacturing

ECSA had established its first subsidiary plant in 1986 and the second in 1989. There were several reasons for establishing subsidiary plants in small towns rather than expanding the main plant. Management thought that in small towns the workers would be more dependent on the factory, that relations between management and workers in a small factory would be closer, and that this would result in lower absenteeism, lower turnover and higher motivation, all of which would boost productivity. Management also thought that having a subsidiary plant in a small town would bring savings in terms of land prices, taxes, wages, and other costs. Furthermore, they thought that it would be easier for the company to train up supervisors and managers in a small decentralized plant, and that the manager of a small plant would be able to control operations more effectively with less bureaucracy. In their view, the most appropriate size for a subsidiary plant was between 150 and 250 workers.

Under ECSA's decentralization program, the three plant managers reported to the assistant general manager for manufacturing. The plant managers had full responsibility for plant operations, within the framework of policies and procedures established by head office. Each plant manager had his own accounting, industrial relations, production control and engineering teams. Although team members reported to their plant manager, they also had to work closely with their colleagues at the head office.

The company's top management thought that the decentralization program had achieved its objectives. Machining operations were more profitable in the subsidiary plants than in the main plant. On the other hand, the company's relations with the plant employees and local communities had proven satisfactory.

ECSA had not had to organize any large-scale training program in either of the two subsidiary plants, as in both cases it had been able to hire sufficient qualified workers. In both communities, the ECSA plant had replaced other manufacturing companies that had shut down or moved.

## The Contract

The surge in European aeronautical and space programs in the late nineties brought an increase in orders at ECSA, mainly for parts and assemblies for aircraft and satellites. By August 2010 it was clear that the company needed an additional plant and more equipment to fulfill a contract to supply blades for wind turbines, awarded unexpectedly in July that year. The turbine manufacturer's specifications called for a size and quality of blade that could not be produced using the company's existing facilities, which were working at near full capacity in making parts for regular customers. ECSA's top management was convinced that the company's existing facilities would reach full capacity during the next twelve months. A preliminary study found that none of the existing plants had enough middle managers and supervisors to be able to work a second or third shift.

Under the three-year contract with the new customer, delivery of the blades was due to start on 10 July 2011 and ECSA would incur a penalty of 50,000 euros per day if there were delays (after a one-week grace period). Top management estimated that the company could



conceivably afford to pay the penalty, as the contract was expected to yield a level of sales per employee 15% above the company's average. They realized, however, that if ECSA failed to meet delivery dates, it was unlikely to win further contracts from that customer.

## Need for Expansion

After meeting with customer representatives, ECSA's top management concluded that they would need a floor area of approximately 10,000 square meters to produce the parts for the wind turbines. This manufacturing operation would be completely independent from operations in the other three plants. According to management estimates, the new building would cost 1.5 million euros, which the company could fund with its own resources, as it had a low level of debt. They had looked into the possibility of renting a plant but had been unable to find anything suitable in terms of the dust-tightness and controlled temperature and humidity required in certain areas of the new plant. The builders told ECSA that it would take four to six months to complete the building.

Management thought that the demand for wind turbine parts might decrease in the next five years. In fact, after the crisis of the early 1990s, the company's production for the composites industry had declined. During this period ECSA had used the resulting free space for manufacturing parts for satellites, which were in high demand, as well as new products for the other markets it served.

After analyzing various market studies, management thought that the existing plant facilities were sufficient to meet normal demand for the company's current range of products. Nevertheless, the company went ahead with its new product R&D program, as management expected to put the new products into production as soon as new facilities became available.

The new plant would work two shifts; a third shift was ruled out, as industry experience suggested that it resulted in quality defects.

According to company estimates, equipment worth some 10 million euros (digital controls and other specialized equipment) would be required. This investment would be carried out through an agreement with the wind turbine manufacturer, under which the latter would loan its own equipment for use in the new plant.

Management estimated that the new plant would require 220 workers. Approximately 150 of the jobs would be for skilled workers, while the rest would be unskilled. The supervisors and managers would be recruited internally. It was expected that the deputy manager of the main plant would become the manager of the new plant.

After various possible sites had been examined, the choice was boiled down to two. The first was a few blocks from the main plant and the second, in a small town some 100 kilometers away. The towns in which the two existing subsidiary plants were located had not been considered because it would be impossible to find the necessary staff, and also because management did not want to have the workforce concentrated in any one location. Expanding the main plant was not an option, as there was no space.

## Location of the New Plant: "City" Option

ECSA management considered themselves lucky to have found a satisfactory site close to the main plant. A few years earlier, due to an urban development program, the city had seen an influx of manufacturing companies and there was not much land left for industrial use. The land and buildings were expected to fetch a good price if they ever had to be resold.