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The creation of ECOTÈCNIA, a pioneer company in the wind turbines building industry, and the current status of Renewable Energy in Spain

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Ladies and Gentleman,

It is an honour to join you here to collect the prize awarded by the prestigious Wind SolarSuperState Association, based in Zurich, for my participation in the team that founded Ecotècnia -today Alstom Wind- one of the pioneers in the construction of wind turbines in Europe. Frankly I think my colleagues deserve this prize more than me, but I am proud to represent here the whole team.

I will divide my intervention into two parts. In the first part I will talk about the history of the company Ecotècnia and in the second I will address the issue of the current status of Renewable Energy in Spain.

Brief history of Ecotècnia S.Coop. (Today Alstom Wind)

Ecotècnia was founded in 1981, thus more than thirty years ago. It is headquartered in Barcelona but has factories in As Somozas (A Coruña), Buñuel (Navarre) and Coreses (Zamora).

The very rapid growth experienced by the company in the 80s and 90s of the last century, fired its need for capital. Due to this fact, since April 1999, Ecotècnia became part of Mondragón Corporación Cooperativa (MCC) based in the Basque Country, one of the most powerful Spanish industrial groups, formed by 100 cooperatives operating in various industries. In 2007, Ecotècnia was bought by Alstom for 350 million euros. About 800 employees worked in the company and its turnover was 400 million, approximately.

Period 1981-2007 Ecotècnia S.Coop.

In the late 70's, Spain was in political transition after the long period of dictatorship. These were years of intense labour unrest and economic instability, with inflation above 30% in 1977. In this turbulent period, the country was recovering freedoms. Political parties and trade unions emerged from clandestine underground in a process that culminated in 1978 with the approval of the new Constitution in Parliament.

At this time, environmental movements began to be significant, expressing their

concerns regarding the increase of pollution and disasters such as the toxic gas leak in Seveso, the mercury poisoning of the Minamata Japanese fishermen, the oil spills caused by the sinking of "Torrey Canyon" and "Amoco Cadiz" tankers... - and the depletion of the planet's resources, as outlined in the famous Club of Rome report "limits to Growth" which was published in 1972. In Catalonia, antinuclear demonstrations were frequent. Many aspired to a different type of development.

In this context a group of engineers associated with the ecological thinking and motivated by the forms of alternative work organization began to meet to explore possibilities of starting a company that would develop in practice alternative technologies. Joaquim Corominas, then a professor at the School of Telecommunications Engineering, and Josep Puig, who was doing his doctoral thesis on wind energy under the direction of Corominas- were the promoters of the group, soon joined by Pere Escorsa, then associate professor of Economics at the School of Industrial Engineering of Barcelona. The previous three formed the "veteran" core (35-41 years), which was expanded with the gradual incorporation of young engineers who had just finished their career. In these preparatory meetings many topics were discussed, such as the ideas of Schumacher, author of "Small is beautiful", the technical aspects of wind turbines (Corominas and Puig had been in Denmark and had plenty of documentation), the Mondragon cooperatives (Escorsa had been there) or the viability of starting a business.

This period ended up with the formal establishment of the company Ecotècnia Cooperative Society in Barcelona on the 2th of April of 1981. The act was signed by eight of the nine members of the group, since one was doing military service. The initial capital was 80,000 pesetas! (480 €). Each partner contributed with 10,000 pesetas (60 €). They rented a small room in an apartment in Barcelona where the company was domiciled. At that moment, no member resigned from his previous regular activity. The objective of the cooperative was promoting technology available worldwide and enabling a better use of local resources as well as the use of renewable energy, respecting the environment and, in the framework of the work organization, being participative.

After the constitution of the company a difficult period followed. There were no resources to build a first prototype of wind turbine and, therefore, there was nothing concrete to offer. The first attempts to get a loan that would allow building the prototype failed, the delegate of a major bank office in Spain answered: You are "illuminated people" and will go nowhere. Finally, Caixa d'Enginyers granted a personal loan of one million pesetas (this now would be approximately € 6,000) to one of the partners, allowing therefore to modestly start some activities.

But sometimes luck favors the bold ones; in July 1981 the CDTI (Centre for Industrial Technological Development), an agency under the Ministry of Industry, announced a competition in the framework of the national plan promoting research and technological innovation, funded by the Ministry, for the design and construction of 5-10 KW and 25 KW wind turbines. The proposal of Ecotècnia was selected and in 1982 Ecotècnia signed a cooperation agreement with CDTI, which financed 90% of the project.

Finally, on the 10th of March 1984 the 15 kW of rated power, 12 meters in diameter and 14 meters high tower prototype was officially installed in Vilopriu, province of Girona, near the Costa Brava.

The Vilopriu prototype was an important milestone in the history of Ecotècnia in that it constituted the basis for its takeoff. In 1985 4 12/15 windmills were installed in Guadalajara, Ciudad Real, Albacete and Girona. In late 1987 the number of 12/30 turbines in operation or under construction was 32, with a total of 1 MW of installed capacity. 24 of these windmills were located in the wind farms of La Granadilla (Tenerife), Tarifa (Cadiz) and Ontalafia (Albacete). Ecotècnia was the only Spanish manufacturer utilizing proprietary developments in the three technology areas involved in the manufacture of wind turbine: blades, mechanics and electronics.

The experience and know-how acquired, enabled Ecotècnia to make the decision to embark in an ambitious wind turbine development project called ECO20 (20 m Diameter helix / 150 kw), for which he obtained funding from IDEA (Institute for Diversification and Saving of Energy) and the European Commission. The prototype was installed in Tarifa (Cadiz) in July 1989, nearby the 10 12/30 windmills that Ecotècnia had installed previously there. With this project Ecotècnia initiated the development of a second generation of wind energy converters.

In 1990 Ecotècnia formed together with several electrical companies and development agencies a society called " Energía eólica del Estrecho S.A.", with a 20% share. This society bought turnkey a 10 MW windfarm (66 150kW turbines) installed in Tarifa, with a total investment of 1,600 M. pesetas. Ecotècnia provided 75% of the park (50 turbines) and Made, a subsidiary of Endesa, the remaining 25%. This park was inaugurated in January 1993, and along with another park, also in Tarifa, formed the largest wind farm in Europe (30 MW).

Ecotècnia continued to grow, from 15 kw in 1984 to the ECO74 model (propeller of 74 m. in diameter and 1.67 MW) in 2003. Most facilities were settled in Spain, but 10% of the production was distributed in countries such as Portugal, France, Italy, Japan and India. In India (Gujarat) Ecotècnia built in 1995 a windfarm with 10 ECO28/225 kW, forming a joint venture with an Indian industrial group. It also has facilities in Tiraguanó (Cuba). In January 2001, began to export wind turbines to Japan, where it has a technology transfer and commercialization agreement with the company Hitachi Zosen.

The quality of Ecotècnia turbines, built with proprietary technology, won international recognition. According to data published by the EUROWIN Database, the 4 best wind turbines in Europe in 1993, among more than 7,400 machines, in terms of energy efficiency, measured as output per area swept by the blades (KWh/m²) were Ecotècnia's ECO20/150 Kw machines. 38 of the top 50 machines in the list, were from Ecotècnia.

In 2001 the founders and the direction of Ecotècnia were awarded with the Poul la Cour Prize by the European Wind Energy Conference, recognizing not only the technical aspects of the windmills but also the cooperative nature of the company.

Period 2007-2012. Alstom Ecotècnia and Alstom Wind

Following its sale, the company changed his name to Alstom Ecotècnia, until 2010 when it was renamed Alstom Wind. Alstom Wind maintains its headquarters in Barcelona (one of the co-founders of Ecotècnia, Miquel Cabré, is the current Strategy and Development Director).

The company Iberdrola has ordered recently to Alstom, 217 MW of ECO100/3MW wind turbines for the Whitelee park in Scotland. The first ECO100/3MW was installed in Vieux Moulin park, France. In addition, Alstom wind's factory in Buñuel is already producing wind turbines for a 101.87 MW contract in Morocco and for another of 95 MW in Brazil.

Currently, Alstom is building 4 5MW windmills for the offshore Park of l'Ametlla, on the coast of the province of Tarragona, in the Mediterranean. In the French coast, near Saint Nazaire, Alstom Wind opened in March the first 6 MW offshore wind turbine, with a propeller of 150 ms. diameter.

The current situation of Renewable Energy in Spain

In 2006, Spain occupied the second position in the top world countries in cumulative capacity with 11,614 MW, preceded only by Germany (20,652 MW) and ahead of the United States (11,575 MW). The first Spanish wind company, Gamesa Wind -owned by Iberdrola and BBVA- was the third largest manufacturer in the world. In 2011 the ranking has changed: now China leads the installed wind capacity (62,733 MW), followed by Germany, Spain and India.

But the crisis arrived, and with it, regulatory changes and cuts in state aid. This has led to a paralysis in the Spanish market for renewable energy. The PV sector, which had grown exponentially in recent years under generous subsidies, is sadly about to disappear.

In 2011, wind power accounted for the 16% of the electricity produced in Spain, and reached the 60% in the 8th of November. But today, companies must work outside Spain, since there is hardly any projects in the internal market. 92% of Gamesa's sales are abroad (India, China, Latin America, United States). Iberdrola is building the largest wind farm in the world (400 MW) in the Baltic deep waters (Project Wikinger) to generate about 5 MW. Over the 84% of the wind power installed by Iberdrola in 2011 has been outside Spain.

Right now the government seems very concerned about the electricity tariff shortfall, estimated about 24,000 million Euro. Everything seems to indicate that Renewable Energies are going to pay for it, accused of being the cause of the shortfall. The Government prepares an energy reform that is clearly committed to nuclear energy, planning to extend in ten years the life span of nuclear plants. The Electrical lobby has won the battle.

The different technologies will have to pay soon new taxes: nuclear, hydro, coal, gas and combined cycle will be taxed at 4%, biomass at 4.5%, wind at 11%, the thermoelectric at 13% and Phtotovoltaic at 19%. Soon Spain will no longer be at the forefront and will become a residual country, ignoring the continual recriminations form Brussels for the abandonment of renewables. It will be another historic mistake.