

**Living from the air of the sky:
The first citizen's owned wind turbine in Catalonia
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- **Abstract**

On March 10th, 2009 a special event took place in Barcelona: the 25th anniversary of the commissioning of the first modern wind turbine connected to the grid: the Ecotècnia 12/15, installed in Valldevià (Vilopriu, Empordà, Catalunya) in 1984. The local section of EUROSOLAR acting as organizer of the event launched a innovative proposal in the Spanish wind playing field: to push for a partnership between people living in urban areas and people living in rural areas in order to make possible the installation of megawatt size wind machine owned by citizens. Since then, it has been identified an adequate location, a small company has been created to act as wind developer and the procedure to make possible the citizen's ownership has been created. Also it has been signed an agreement with a local wind manufacturing company. In the next months it is planned to install the Eco-122 machine at the Pujalt municipality. It will be the first wind machine owned by citizenry in Catalonia and Spain.

- **Background**

Despite Spain has been leading the wind energy development in Europe for many years, never a single community wind turbine owned has been installed.

On March 10, 2009 a group of wind people commemorated the 25th anniversary of the commissioning of the first modern wind turbine connected to the grid in Catalonia. It was the wind turbine that the Catalan workers coop. Ecotècnia (founded in 1981) installed in Valldevià (Vilopriu, Empordà, NE of Iberian Peninsula). The wind machine was named Ecotècnia 12/15, for its 12 m. diameter and 15 kW capacity. On March 10th, 1984, hundreds of people took part in the inauguration party held at the location where the first wind turbine connected to the grid was installed. Ecotècnia 12/15 gave birth to the modern commercial wind technology in Catalonia. This event marked the beginning of the modern era of wind power in Catalonia.

To remember and celebrate this event, the local section of Eurosolar (in Catalonia) launched a pioneering initiative the country, which was made public the same March 10, 2009. The initiative, called 'Living from the air of the sky', involves the installation of a wind turbine in a suitable place, with the main feature being shared ownership among citizens who voluntarily provide the money necessary to make reality the project.

The project 'Living from the air of the sky' was initiated by the local branch of EUROSOLAR - European Association for Renewable Energies and was spread by BarnaGEL - Barcelona Local Energy Group. On 10 March 2009, BarnaGEL started to make to know the project and collecting the first persons and families

interested in it.

- **The project 'Living from the air of the sky'**

To carry out the project 'Living from the air of the sky', four people came together and founded Eolpop S.L. (a small private company), a limited partnership that is responsible for the promotion and realization of the project and it is the body for issuing the shares that will allow public participation in the ownership of the turbine.

- The 4 people who built Eolpop S.L. were: Cristina Domingo (medical doctor and physician acupuncturist), Josep Puig (PhD. industrial engineer, energy professor at UAB and director of Ecoserveis), Josefa Sala (layer and xxx) and Santiago Vilanova (journalist and environmental consultant).

Eolpop S.L. it is responsible for

- finding a suitable location (good wind, easy access and proximity to the medium voltage grid),
- redaction of the project,
- to reach an agreement with the owners of the land and with the town council of the site,
- to manage all the permits,
- to choose the model of wind turbine,
- to sign the purchasing contract with the manufacturer,
- to oversee the assembly and installation of the wind machine,
- to manage the respective contracts for selling electricity,
- O&M and insurance.

The characteristics of the 'Living from the air of the sky' wind project are:

- The main goal is to install a wind turbine of shared ownership, which can generate clean and 'green' electricity that will make possible the creation of solidarity links between people living in urban areas and those living in rural areas. Today, rural areas around the world are being marginalized by the prevailing economic global system and all the urban areas are attracting young people from rural villages. Often, many rural areas are rich in natural common goods, such as sun and wind, and also have areas that can harness the sun and wind present in their boundaries, but they don't have available the necessary capital, nor the financing for harnessing the wind and sun. However, in many urban areas there are some people living in families with savings deposited in bank accounts over which they have no control and, moreover, give a very low returns.

- An additional objective is to enable people and / or families to openly express the energy they use in their everyday life is 'green' and clean, generated at the location where the wind turbine is installed.

- The cost of installation and commissioning is covered with the participation of

people: popular shareholding, both people and / or families living in urban and rural areas, as non for profit organizations. Priority will be given to people and / or families who live around or near the site.

- The site chosen is within the municipality of Pujalt (Anoia, Catalonia), given the good wind conditions, access and connection to the medium voltage electricity grid.
- The chosen wind turbine is the model Alstom ECO-122 (formerly Ecotècnia), a wind machine specially designed for low wind areas.

- **Options for participation**

Who can participate in the wind project 'Living from the air of the sky'? Any individual, or group of people (family), or any non-profit organisation, can participate in the project, providing the amount of money corresponding to the number of shares available to be decided. They can also participate in the project small businesses who wish to contribute to the democratization of energy systems.

- The pre-registration is finally confirmed when he has made a contribution of 100 € if it is a natural person, 250 € if it is a family and 500 € if it is a non profit. This contribution will be deducted from the contribution of capital at the time of formalizing the contribution to capital.
- The minimum investment to participate in the project will be the required to generate 1000 kWh/year of clean and 'green' electricity in the chosen location.
- The investment that each person and / or family wants to do can be calculated from its current level of energy consumption. You can choose the following options:
 - Electricity consumption,
 - Total consumption of electricity and thermal energy,
 - Total consumption of electricity, thermal energy and energy required for motorized travel.
- Number of entries required. As the cost of the turbine is €3,000,000 the number of people needed to make reality the project may be:
 - 3,000 if each would bring 1,000 €
 - 1,000 if each would bring 3,000 €
 - 500 if each would bring 6,000 €
 - 100 if each would bring 30,000 €
- Example: a family that has a domestic energy consumption of 10,950 kWh / year. This corresponds to 7,850 kWh heat (1,562 kg CO₂) and 3,100 kWh electric (862 kg CO₂). The journeys in private vehicles account for 10,000 kWh (2,527 kg CO₂) additional. What investment should I do to meet the energy needs: a) electrical, b) heat, c) car?
 - Electricity: € 1,268

- Thermal energy: €3,212
- Mechanical energy for transport: €4,091
- Total (thermal + electric + car): €8,572

- **Current status of the project**

- Autumn 2011: it has been identified the location where the wind turbine will be erected.
- Winter 2011-2012: the project is defined and concreted.
- March 20th, 2012: the project was registered at the office of Catalan Government, starting the process for all the needed permits.
- April 22nd, 2012: the project is presented to the public at the 17th Earth Fair in Barcelona.