

In this project the design and implementation of an experimental, small scale hybrid system of produced electric energy is presented. Within this framework, a series of measurements was conducted, including meteorological measurements and measurements of produced power, separately for each of the sub-systems. After having that data processed, some techno-economic models were developed.

To accomplish the aim of monitoring the whole energy producing system, a special circuit that leads the data to a commercial data logger, either they are coming from the W/G or the P/V, was built. Moreover, an independent control system was designed and implemented for the W/G, to achieve its protection in case of strong winds. There was also implemented an ohmic consumer, composed of a bank of glow-lamps, to which we drive the produced energy.

The system is built up from a W/G of 1 kW power (Figure 1) and 4 P/V panels of 85 Wp each, meaning that the total power is 340 Wp (Figure 2).



Fig. 1. W/G on the roof of E.C.L.



Fig. 2. P/V bank on the roof of E.C.L.