

## **Renewable Sources and CCHP Techniques in “Technological Polo” (TP) of University of Catania (First step)**

### **Francesco Patania**

Department of Industrial Engineering (DII)  
Catania University (Italy)  
Catania, Sicily, Italy  
[fpatania@dii.unict.it](mailto:fpatania@dii.unict.it)

### **Antonio Gagliano**

Department of Industrial Engineering (DII)  
Catania University (Italy)  
Catania, Sicily, Italy  
[agagliano@dii.unict.it](mailto:agagliano@dii.unict.it)

### **Francesco Nocera**

Department of Industrial Engineering (DII)  
Catania University (Italy)  
Catania, Sicily, Italy  
[fnocera@unict.it](mailto:fnocera@unict.it)

### **Agrifoglio Antonio**

Independent researcher  
Via G. D'Annunzio, 68  
Catania – Italy  
[antonio.agrifoglio@outlook.com](mailto:antonio.agrifoglio@outlook.com)

### **Abstract**

The paper shows in which way the Authors designed TP and related “Complex Energy System” (CES) to supply energy. TP is the University compound of laboratories, courtrooms and classrooms assigned to scientific and technological researches of Engineering Faculty. Architectural features are shown in fig.1, fig.2, fig.3. After a deep analysis of amount of yearly need of various forms of energy, in a correct approach by a proper balance between energy supply and economical parameters, CES has been thought in the way to utilise renewable or assimilated sources of energy. A significant effort in planning has been done to reach goals as saving energy, respect of natural environment and decrease of management cost. The TP is by now performed and it will start the activities in the next July 2015.