

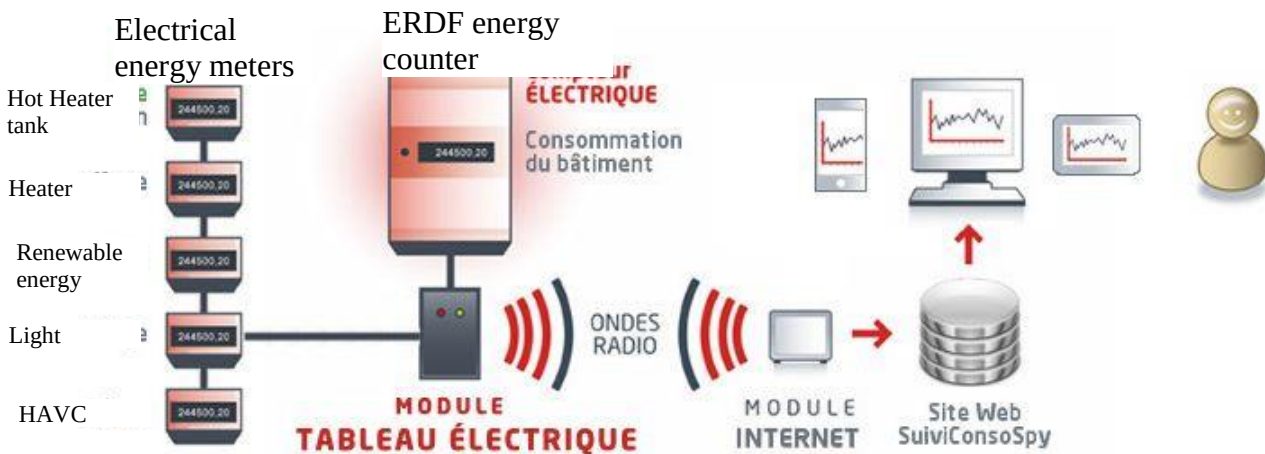
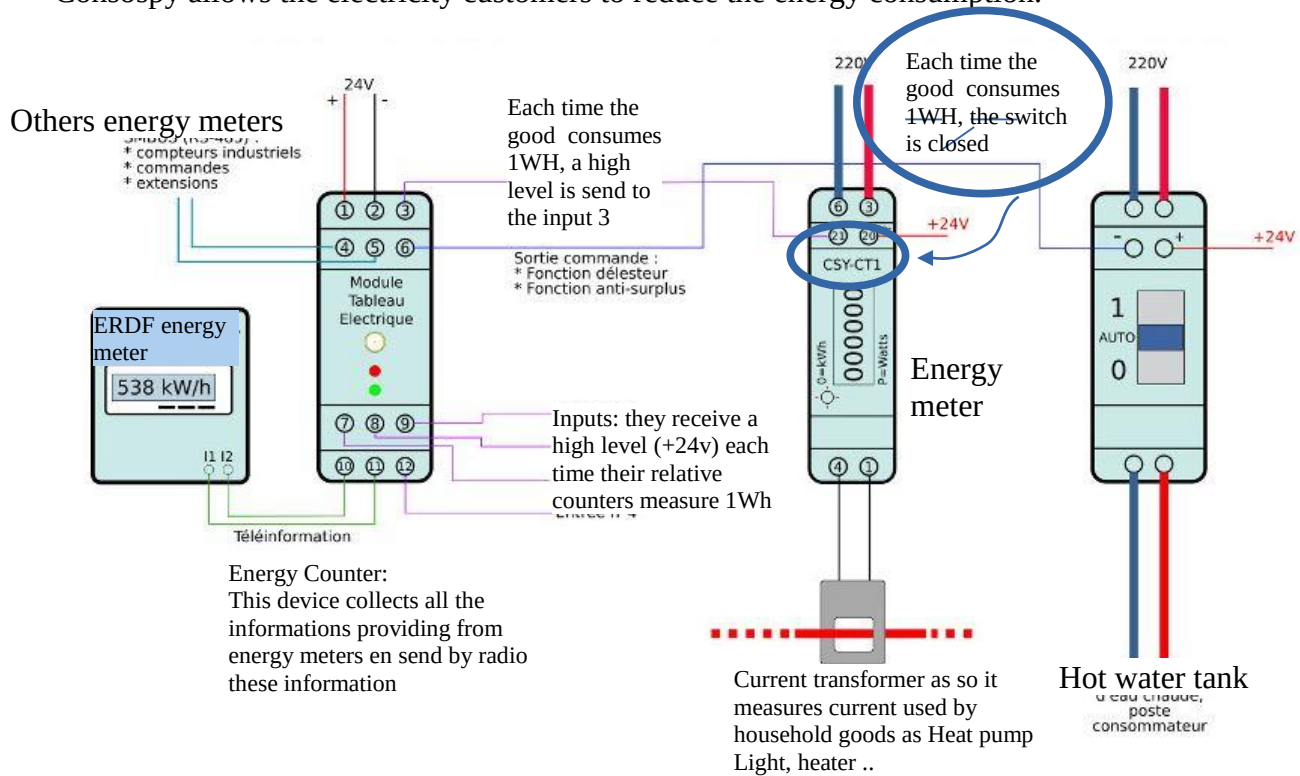
1. Goal:

Through this lab-work, you are going to find out energetic digital signature of each household goods and how is it possible to know if you are at home or not
At the end of this job you will have to explain the energetic digital signature at your classmate.

2. Presentation

a) Diagram

Consospy allows the electricity customers to reduce the energy consumption.



b) Explanation

The electrical energy consumption is measured by energy counters. These counters measure intensity (current) flowing through the different household goods as well as the voltage. Thus, thanks to these 2 parameters, it calculates the electrical power and the electrical energy.

$$\text{Electrical Power} = \text{Voltage} \times \text{Intensity}$$
$$P = U \times I$$

Counter's switch is closed each time it measures 1Wh (Watt hour) or (3600 Joules). This information is transmitted to the Energy counter. This information is then sent to the Internet through a Web site providing from all the energy meters. It counts each meter's Gateway and sends these data to Consospy in the first time by radio, then by internet thanks to the gateway.

Energy = Power x Time

Joules = Watt x seconde

WattHour = Watt x 1 hour so 1 WH = 3600 J

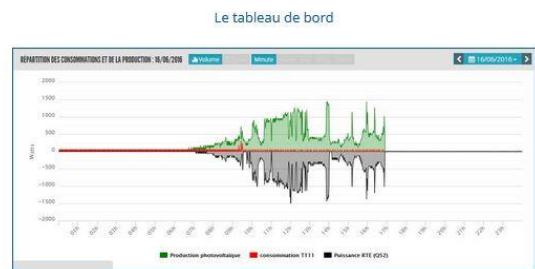
To resume, the electrical energy measurement are transmitted.
The Consospy Site allows user to see the energy consumption in real time.

3. Let's go

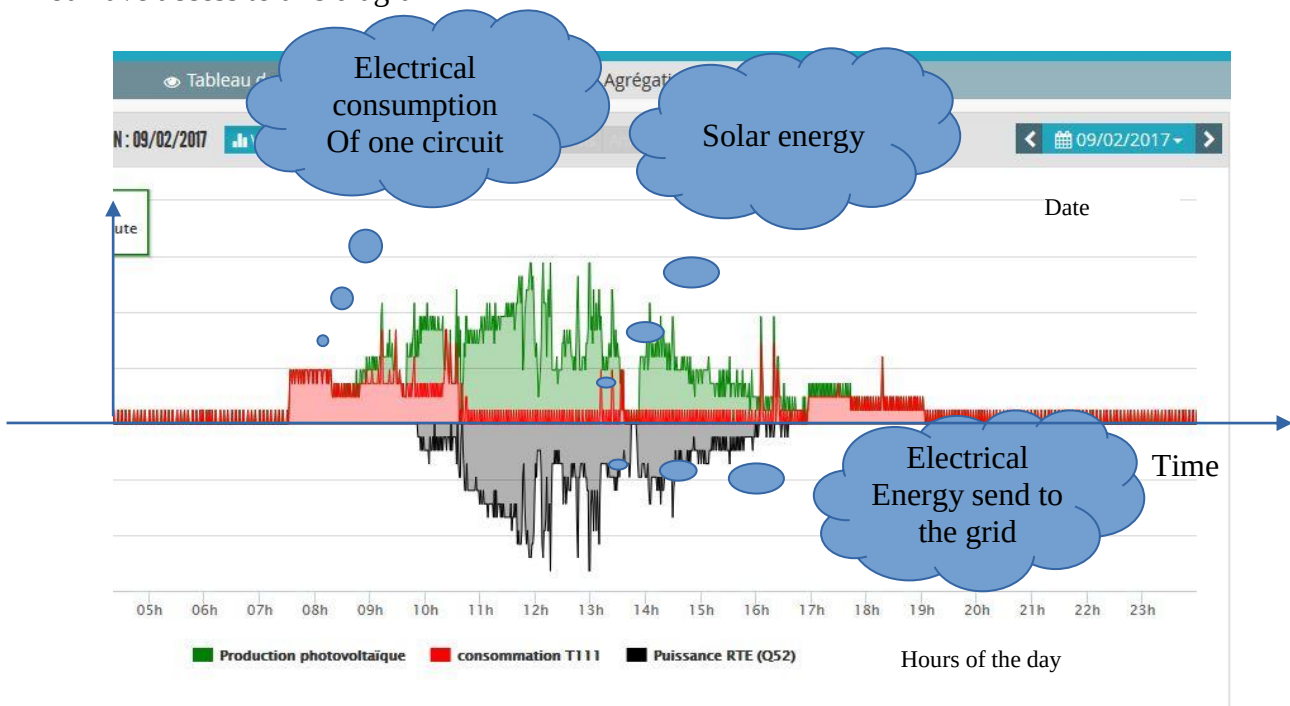
a) Consospy site

Firstly **go to** e-loco livet site.

And click on this picture.

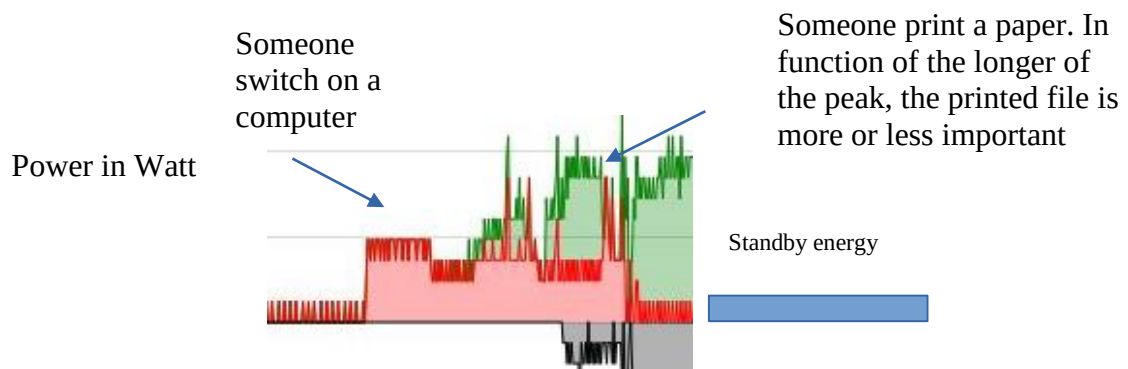


You have access to this diagram



Thanks to the graph, we can identify the different devices when they work. The energy is also easy to see because energy is the produce of Power by Time so here, to know energy, you measure the area.

This graphs shows us the power produced by photovoltaic panel or consumed by 2 computers and a printer



b) [It is your turn to play](#)

We give you some devices (heat pump, lamps, electrical motor, and you are going to plug them one by one in order to collect their own energetic digital signature. Ask to the teacher to give you an electrical counter in order to measure the electrical power. Thus you will compare the power transmitted by Consospy site and your measure. Each time, time by recording the start time, the end time, and the period.

Be careful, each time you have plugged in, you have to wait because Consospy system needs few minutes to send data to the site.

Anyway, ask to your teacher where you have to connect devices and which devices you are going to analyst.

At the end, you have to prepare a sideshow which presents the different goods signatures.

Imagine if a third part site collects this kind of information and what may it do with ? Ask your classmate about this question.