JOURNÉE D'ÉTUDE:
LE LIFTING TECHNOLOGIQUE D'UN IMMEUBLE CINQUANTENAIRE

HAUTE ECOLE DE LA PROVINCE DE LIÈGE

Monitoring énergétique
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EDF Luminus Solutions is the B2B Service Company of EDF group in Belgium

(*) ESCO = Energy Savings COmpany

EDF LUMINUS SOLUTIONS : CUSTOMERS

1. **Government & communities**
2. **Tertiary sector**
3. **Health sector**
4. **Industry**

EDF LUMINUS SOLUTIONS : ACTIVITIES

1. **Energy Performance Contract**

2. **Multitechnical maintenance Contract**

3. **Engineering for B2B Customers**

ENERGY EFFICIENCY

THE TECHNICAL SOLUTIONS

❖ Replacement or improvement of HVAC equipments ;

❖ Relighting ;

❖ Installation and maintenance of local generation equipments : PV, thermal solar, cogeneration ;

❖ Multitechnical maintenance on site ;

❖ Insulation works, windows replacement ;

❖ Communication with building users ;

❖ **Energy monitoring** and remote control of installation.
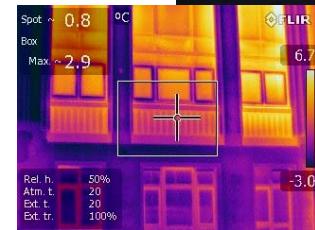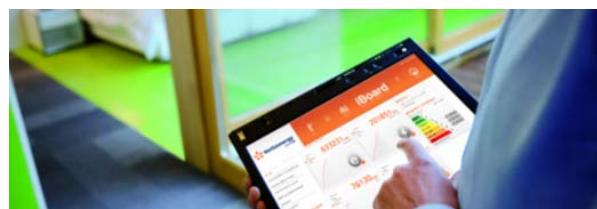
ENERGY MONITORING

Energy Monitoring means continuous measurement of energy meters, sub-meters and/or temperature sensors to allow better understanding and analysis of buildings and occupants behaviours.

Why ?

DIAGNOSTIC

CONTROL

COMMUNICATION

1. With Continuous measurement we can detect :
   - Default of regulation. As an example bad intermittence HVAC parameters ;
   - Schedule defaults ;
   - Bad behaviour of Users ;
   - Non optimized HVAC parameters. Example: Heat curve.

2. We can also follow-up the effect of an energy Efficiency action and objective the result (IPMVP)

3. We can show results and sensitize users.

4. With alarm implementation we increase reaction to deviation.

Atic
for HVAC professionals

eDF luminus solutions

Example of deviation detected by the Monitoring
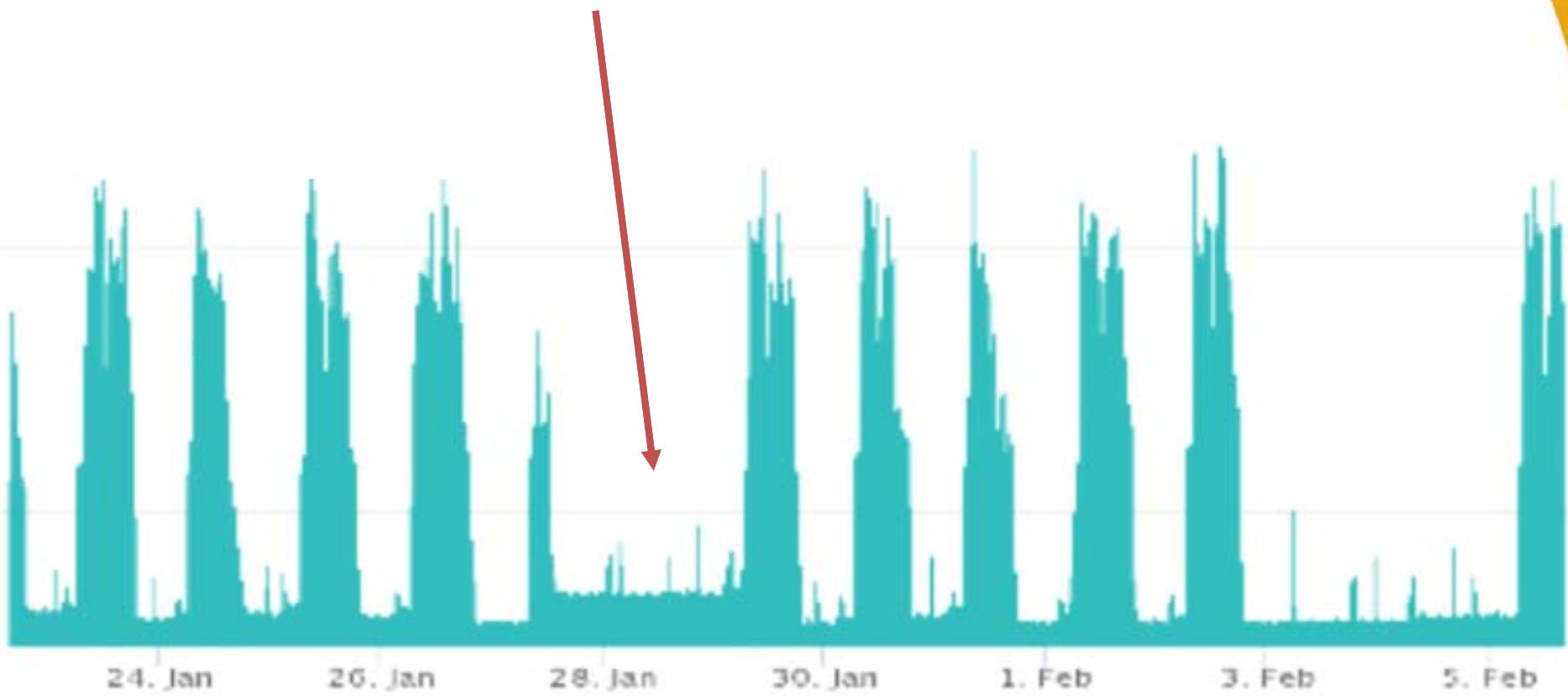
Electrical consumption in a school (1/4h)

Example of regulation default
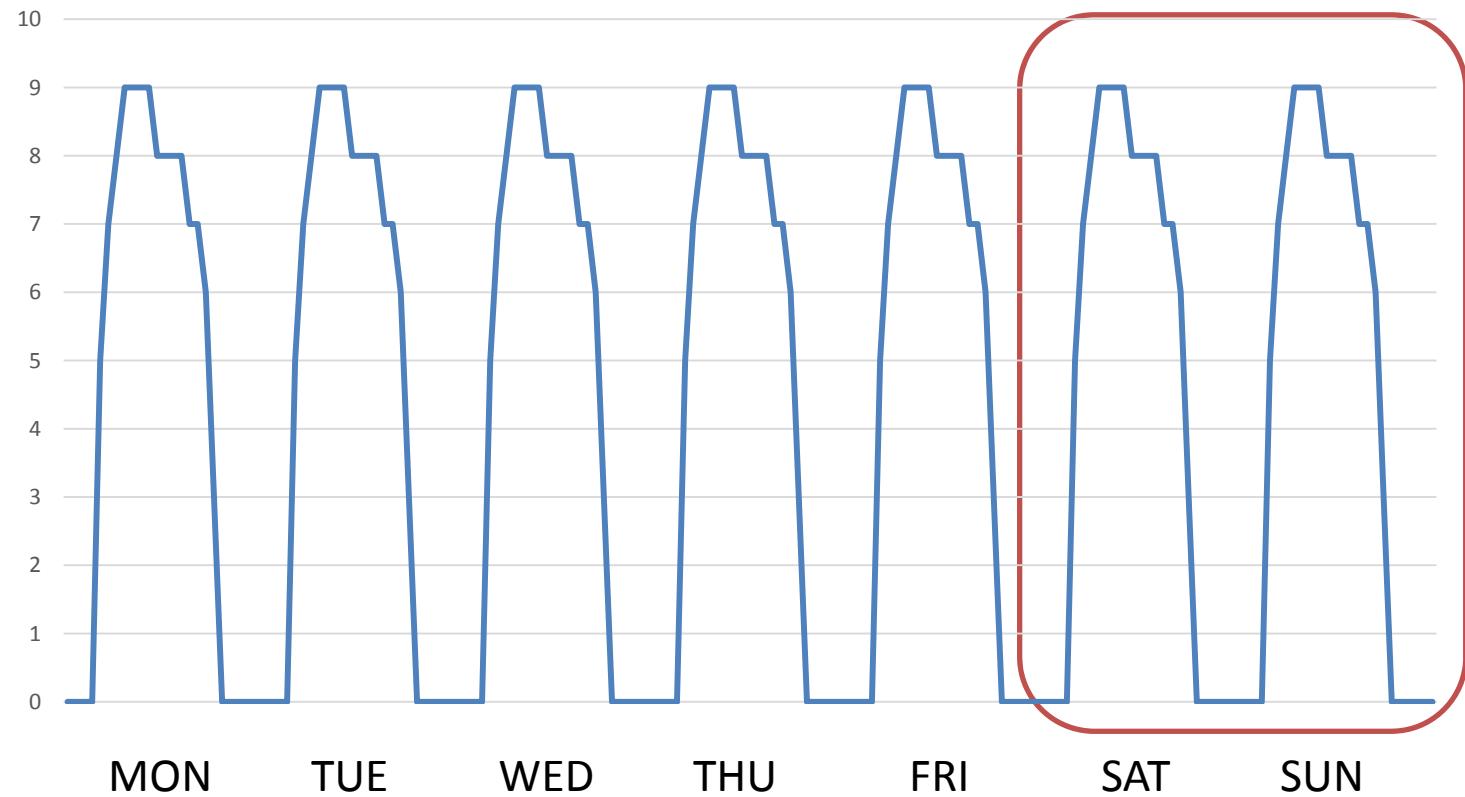
Example of communication tool

Horloge Energétique de EDF

How ?

1. Installation of digital meters and sub-meters
   - Heat
   - Gas
   - Electricity
   - Water
   - + Temperature sensors

2. Transfer of the data via a gateway to our server or cloud solutions.

3. Analysis results via a web interface and dash board

4. Generate reports for the customer.
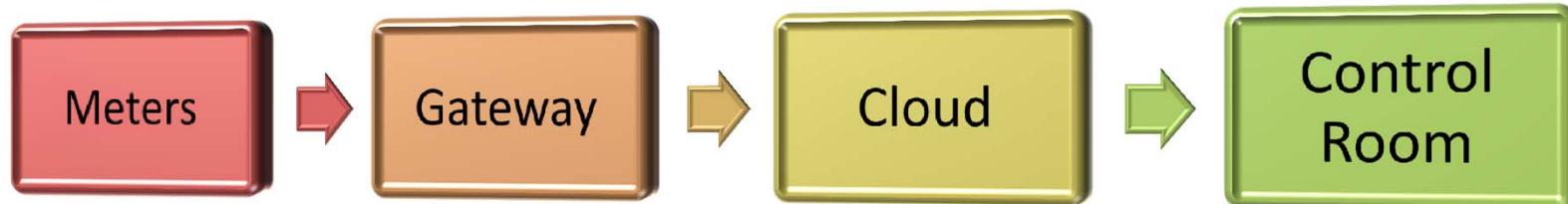
Metering solutions

Gas meter

Thermal meter

Electrical meter

Monitoring @ the Engineering school of the Province of Liège

- Gas metering (1 meter from the grid operator)
- Electricity metering (7 meters)
- Water metering (1 meter)
- Thermal metering in distribution (11 meters)

# Water consumption Nov. 2017

Novembre
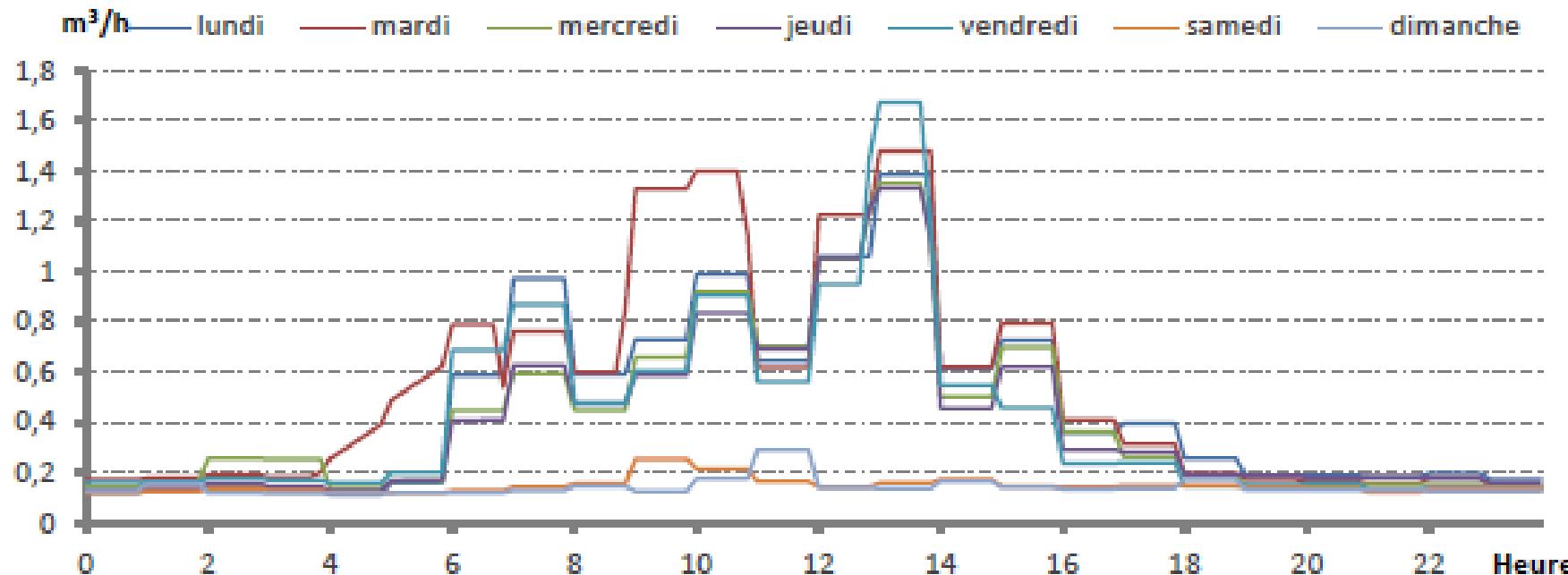
Gas Consumption Nov. 2017
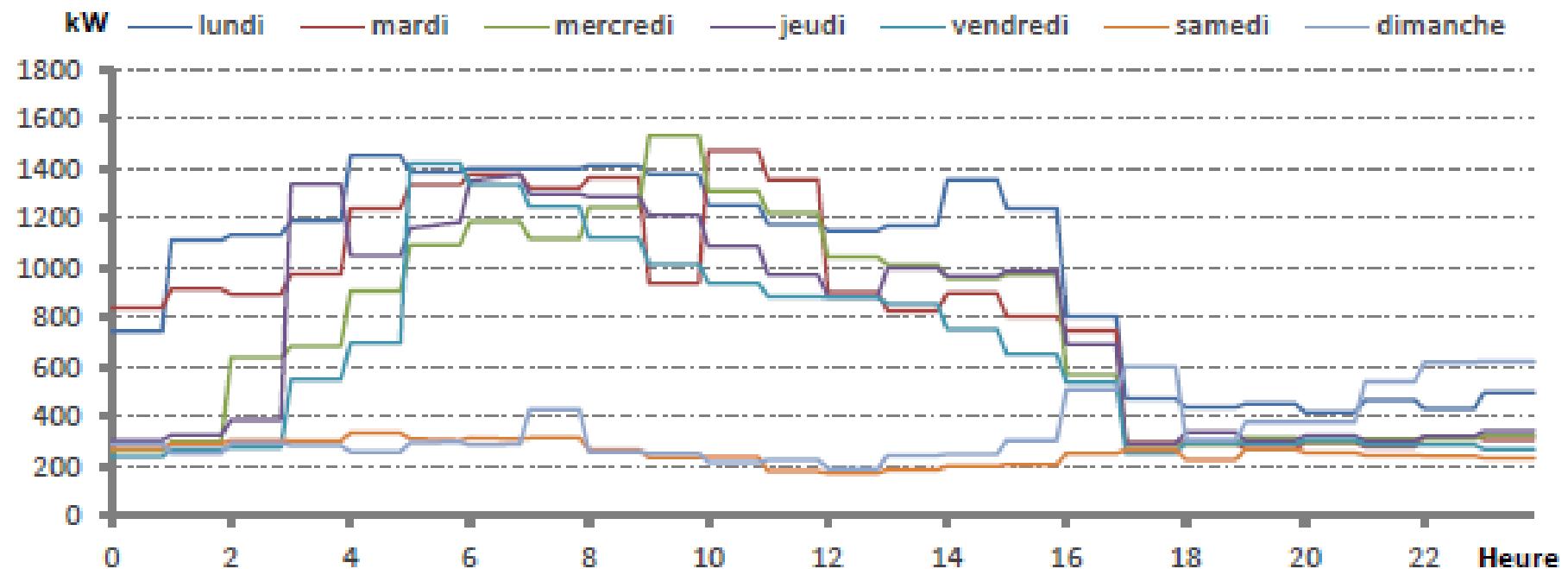
Electrical Consumption Nov. 2017
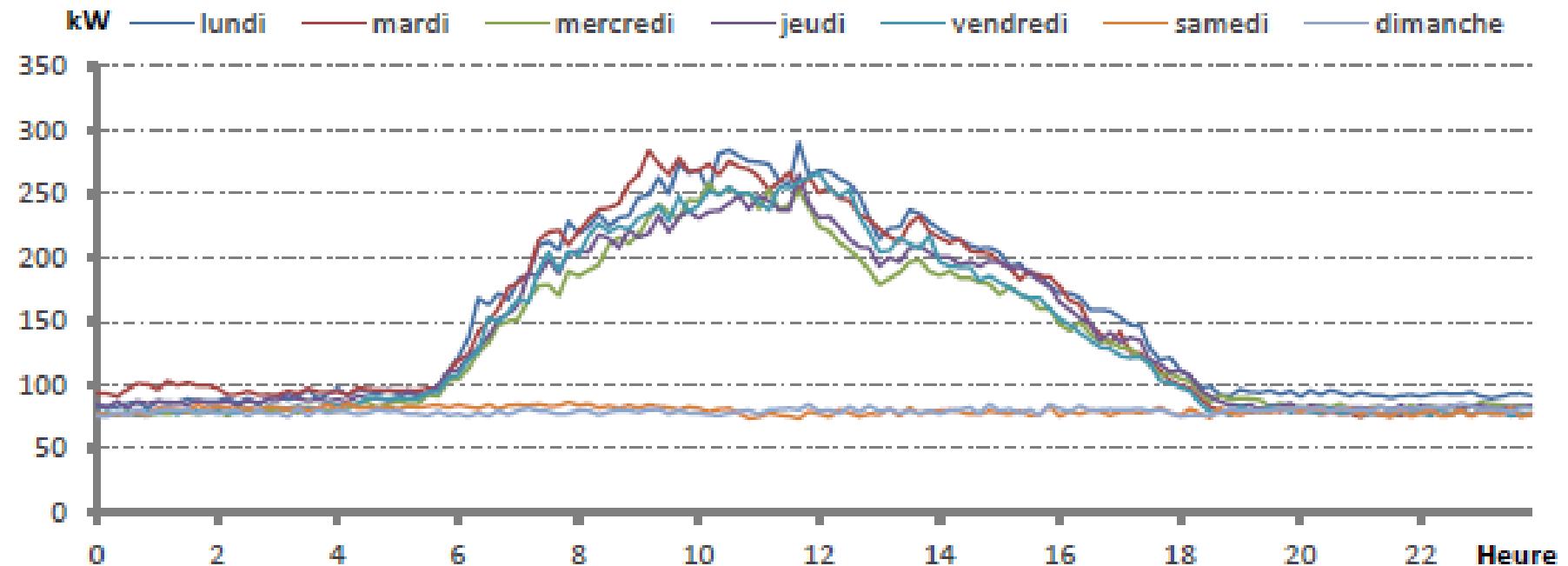
One of the Thermal departure in nov. 2017
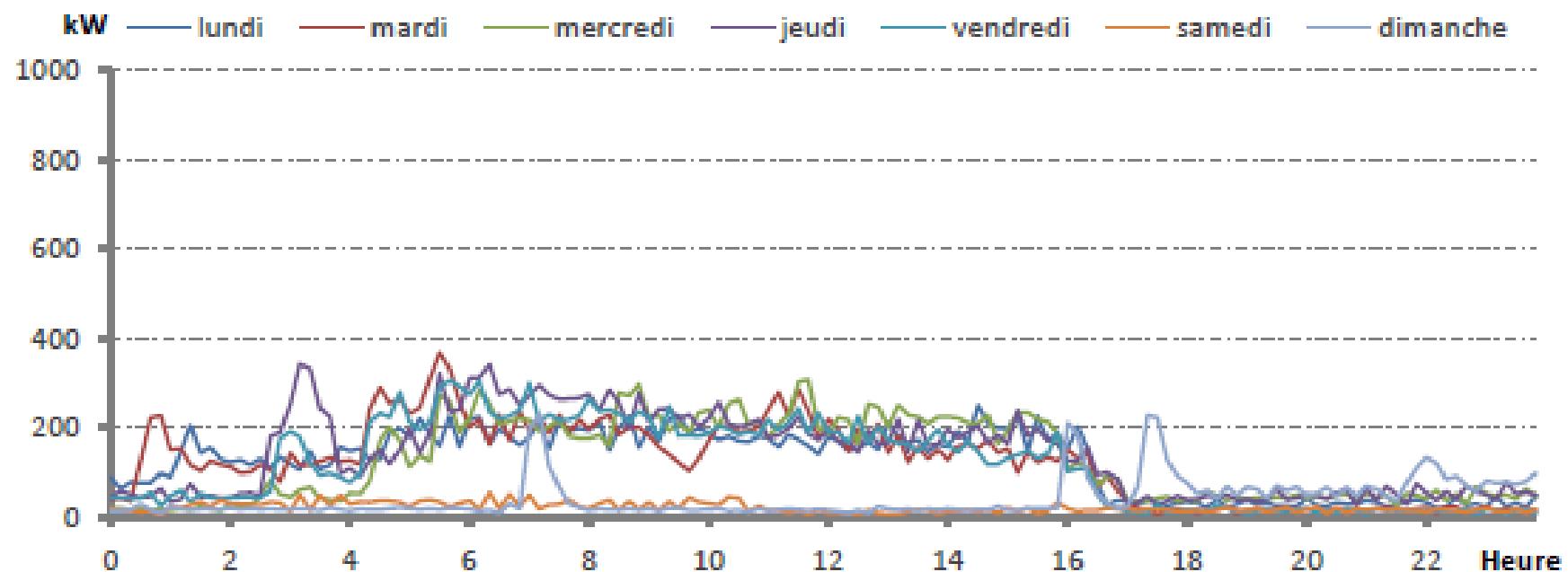
Manual metering

- If no digital metering is installed ;
- Useful before work phase to build reference curve ;
- Write manually meter index ;
- Automatic report in the metering tool

Points of attention

- **<u>Cost of installation & reliability :</u>**
  - Material
  - Installation
  - Gateway connexion (GPRS of ADSL)
  - Local data storage

- **<u>Follow-up and analyse :</u>**
  - Time-consuming
  - Maintenance of equipment

CONCLUSIONS

❖ Energy Monitoring is an efficient diagnostic tool. In this approach it is recommended to limit the number of meters and sensors for budget reason.

❖ Energy Monitoring is also a useful tool to control efficiency of implemented solutions, for instance in case of EPC contract.

❖ Finally, Energy Monitoring is an efficient tool for communication with users to incentive change in behaviour.

Thanks