avob

SPÉCIALISTE DE L'OPTIMISATION ÉNERGÉTIQUE

Smart IOT solutions for Green buildings

Commercial buildings represent most of the consumption, and a large savings potential

Commercial buildings > **60% of the world energy consumption**

	~ 200 TWh	~ 230 TWh	~ 130 TWh	~ 130 TWh	~ 125 TWh
	9-10 € Cts	25–30 € Cts	11-12 € Cts	20-22 € Cts	18-20 € Cts
Potential savings (15%)	**3 B€**	**8,5 B€**	**2,5 B€**	**4 B€**	**3,5 B€**

Overall opportunity of 20 B€ savings!

However, no real solution for energy control in multi site environment

Issues with current solutions

- Difficult to manage network of **heterogeneous buildings**
- Many **single site views**, rare to have multi site control
- Usually **complicated** to deploy and to use
- **Long pay backs**
- Do not manage **users comfort**

Energy management: some customers feedback

« I don’t understand my energy bills »

«I feel there are many billing errors, but I have no time nor ressources to check it all »

« I need simple solutions, easy to deploy, and with a short payback, especially for my small sites. »

« We want to put in place a multi year energy saving plan, but we do not know where to start from… »

« I’ll probably need several solutions, eventually from different vendors, but I need just one interface»

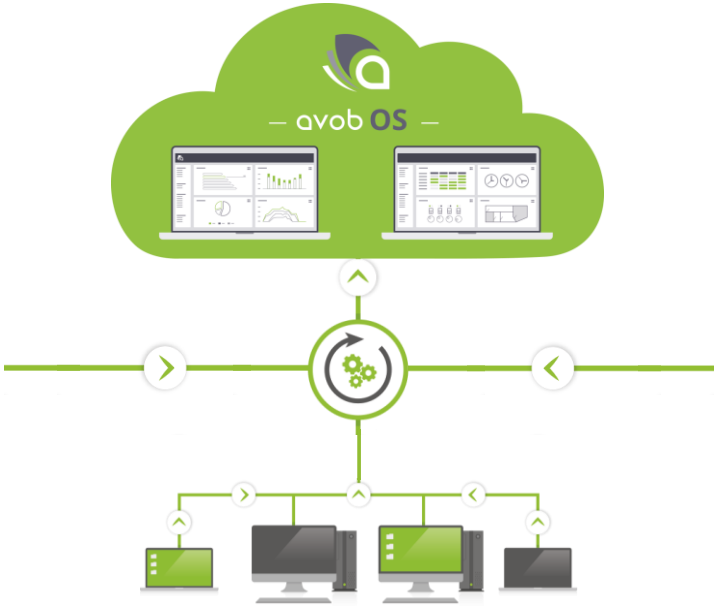
We have an efficient and simple solution, delivering fast results

AVOB has developped a powerful platform …

- Cloud based **SAAS platform** with powerful **Energy Data Analytics** and **smart buildings solutions (IOT)**
- Secured end to end **encrypted communications**
- **All energies** and all usages managed
- Easy interconnection with **external platforms** via standard APIs
- More than **2 Million energy data** points managed
- **Comfort** improvement
- A team of **energy managers** to assist you in your projects

… providing several energy efficiency offers …

Green Bills
(Bills & contracts management and optimisation)



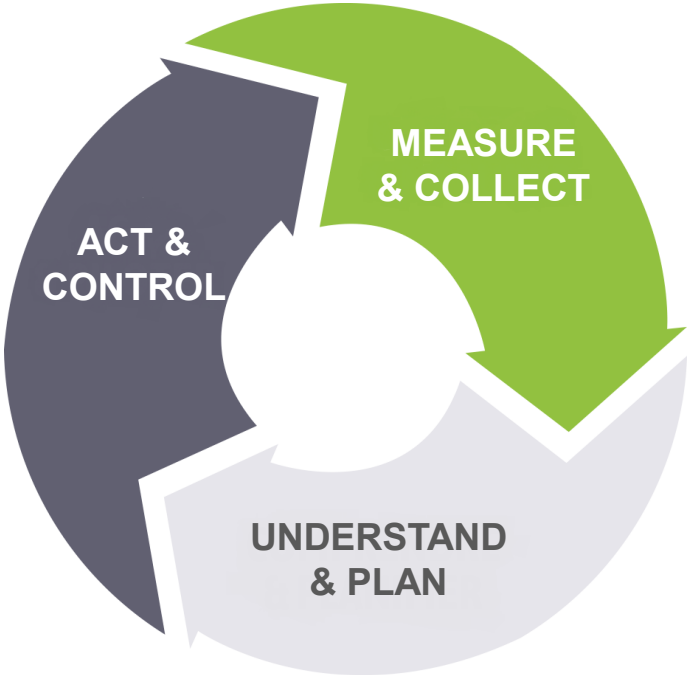
Green IT
(IT Network energy management)

Green buildings
(Building energy monitoring and control)

Energy support services

… to help you become more efficient

- Deployment of **IOT solutions** to control different usages (lights, HVAC, IT, …)
- Detailed measurement of actions
- ROI analysis



- Large data volume integration (**Big Data**)
- Automatization
- Centralisation
- All formats
- All energies

- **Energy data analytics**
- Comparison of buildings and drifts identification

- 2/3 years history
- Setting of priorities
- Definition of energy action plans

Energy bills easily managed and controlled

Up to **10%** savings

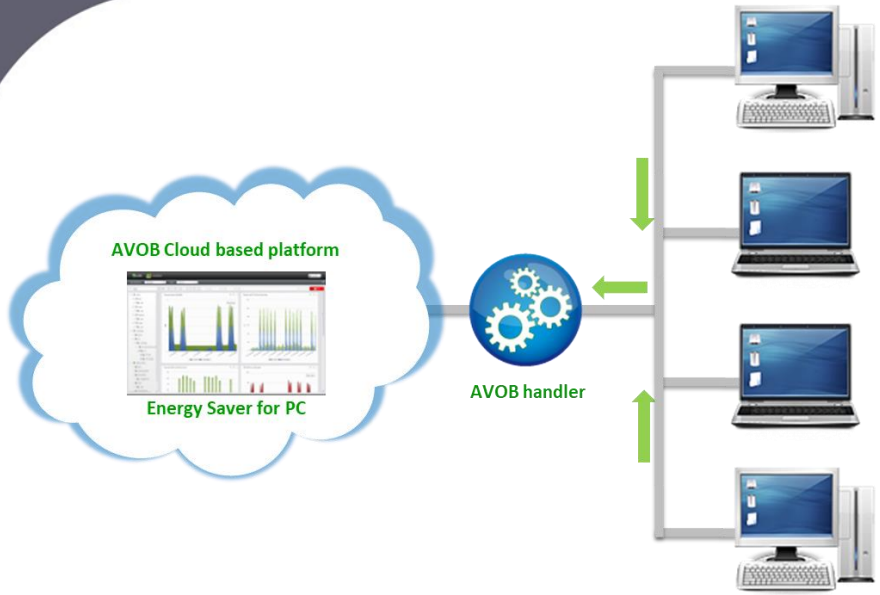
- **Easy upload** of all energy consumption data
- **Any format**, coming from different sources
- **Automatic connection** to energy providers portals
- Historical data integration, and **errors analysis and recovery**
- **Simple** and **synthetic** dashboards
- **Easy analysis** per type / site, and detailed reporting
- Identification and **fixing of energy drifts**
- **No initial investment** (gain sharing model)

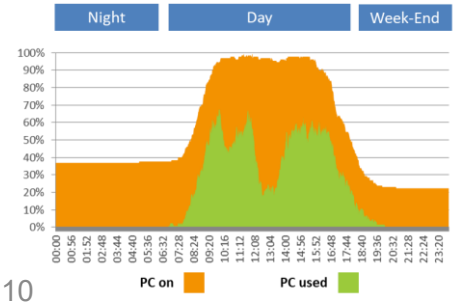
Your buildings get smarter and more efficient

Up to **40%** savings

- **Remote metering** of all energy consumptions
- Detailed **monitoring per application**: lighting, heating, ventilation, cooling, IT network …
- Per Zone/building/site
- **Wireless** communication to field devices
- Integration of **renewable** energy systems
- **Intelligent control** based on predefined policies
- **Energy alarms** handling
- Setting and follow up of **energy action plans**
- **Budgeting** and planning

Your IT network gets Green





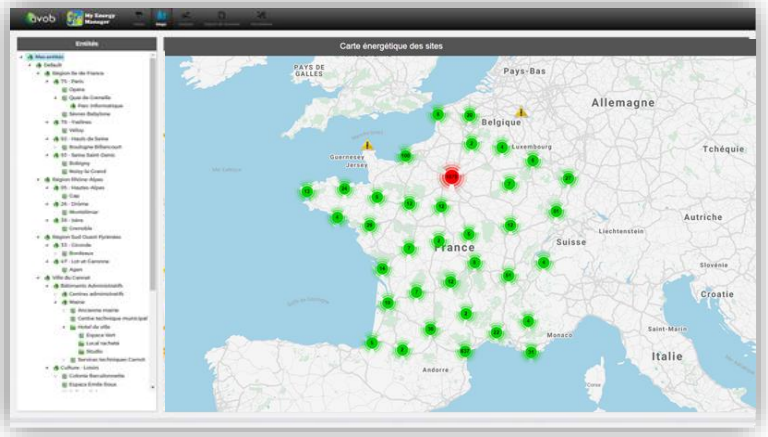
Up to **50%** savings

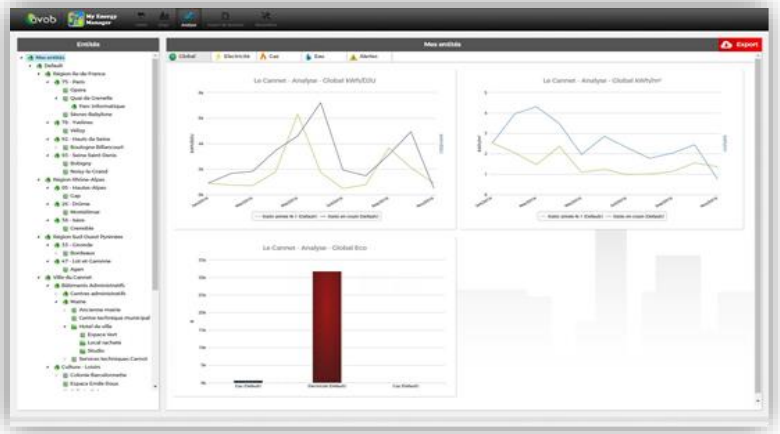
- Detailed **monitoring** and **control** of workstations
- **Hourly policies** defining wake-up and stand-by per workstation
- Detailed **reporting on savings** done per site, type of equipment, …
- PC Software updates **optimisation**
- **Improvement** of PC performances and availabilities
- Users, rights, and asset **management**
- Dedicated **widget** to involve user and provide feedback

Our energy services

- One single platform for all your enegy information
  - ✓ All providers
  - ✓ All energies
  - ✓ Adapted dashboards
  - ✓ Predefined reports
  - ✓ Alarms generation and handling
  - ✓ Rapport prédéfinis
- Dedicated Energy Manager
  - ✓ Single point of contact
  - ✓ Detailed analysis and advises
  - ✓ Specific reports
  - ✓ Interface towards energy providers
- AVOB Energy Club
  - ✓ Participate to AVOB's roadmap
  - ✓ Customized offers
  - ✓ Energy Manager Contest

Examples of some dashboards





Key benefits and differentiation

Customer benefits

- **Short pay back** (8 to 14 months)
- Up to **40% savings**
- **Comfort** and work environment improvement
- **Simple** integration of various data sources
- **Easy reporting** capabilities

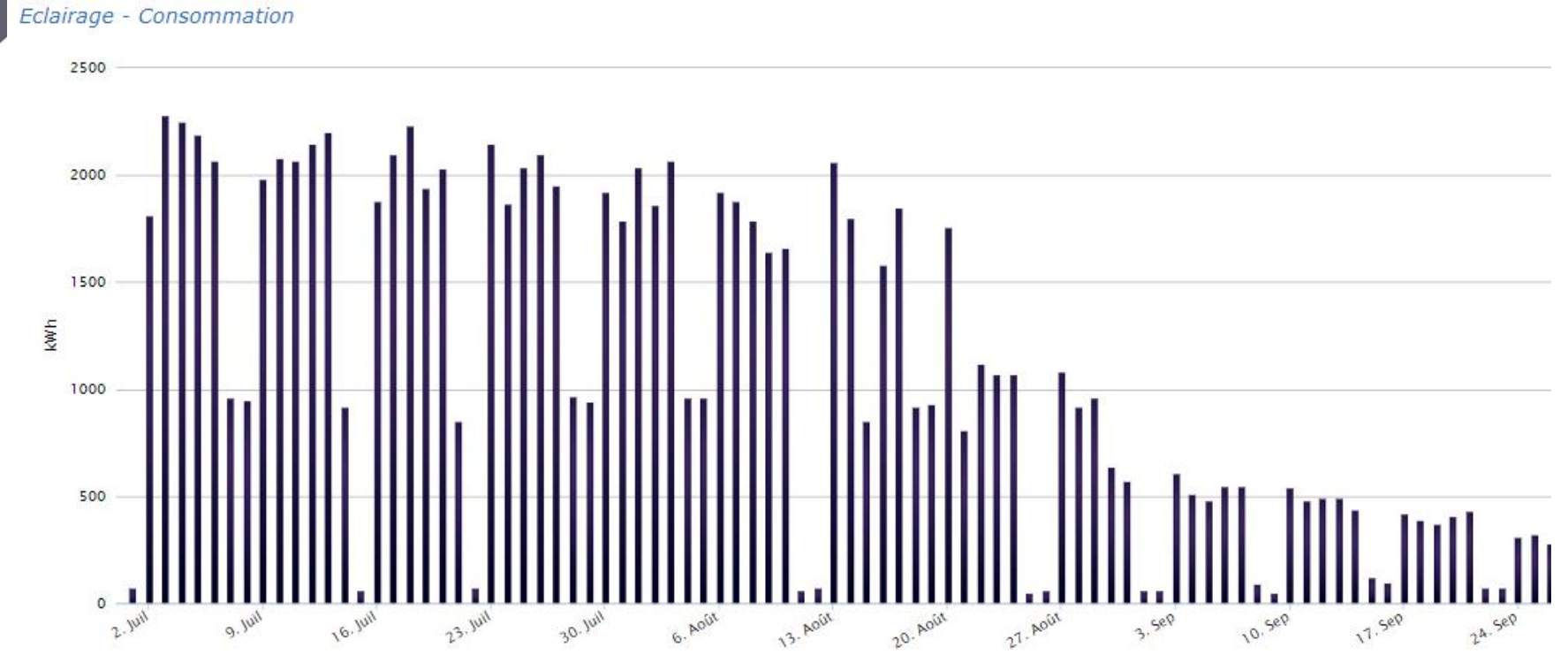
Differentiation

- **Easy** to deploy, **easy** to use
- **Adaptive** to various technical environment
- **Energy support** services
- Help customer **from A to Z** on its energy efficient journey

We bring tangible results to our customers

Customer	Solution Installed	Scope	Results
International bank	Monitoring and control Connection to BMS	33 000m² 3 buildings	**200 K€ savings** identified in 4 months **Payback < 6 months**
IT Service company	Monitoring and control IOT and connection to BMS	multi sites buildings	**Payback < 6 months**
Insurance company	Monitoring IOT : energy, presence, and ambiance	Nation wide branches network	**Comfort improvement** **Usages improvement in correlation with occupation**

Example of relamping in LED



- **> 80%** savings
- Solution with financing : **positive from day 1**

A platform of advanced energy services, …

Bills analysis and optimisation	Energy contract renegotiations Contract optimisation Energy supply
Detailed monitoring	Per usage (lighting, IT, Heating, cooling, water, …) Drift identification and alarms handling Comfort improvement
Intelligent control	Lighting Heating and cooling IT network
Support	Energy support CSR reports Internal communication Energy audits and certification
Equipment	LED / Lighting systems Meters and sub meters Temperature and environment sensors PV and batteries
New services	Demand response Auto consumption Micro Grids

Impact of AVOB solutions since 2016 (EU)

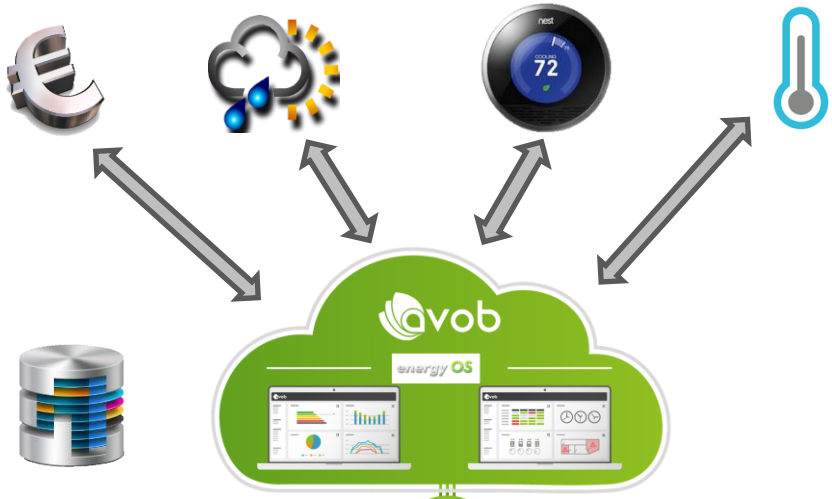
	Results	Equivalent
	8 M€	Annual consumption of a city of 10 000 people
	90 GWh	73 millions of Km avoided by car or 7 000 cars avoided during 1 year
	7 300 tons	

… delivered through a flexible architecture, …

Cloud Services

Cloud Platform

Field



Connection to external applications

Secured connection

IOT field Agent
BacNet – Modbus - Lora

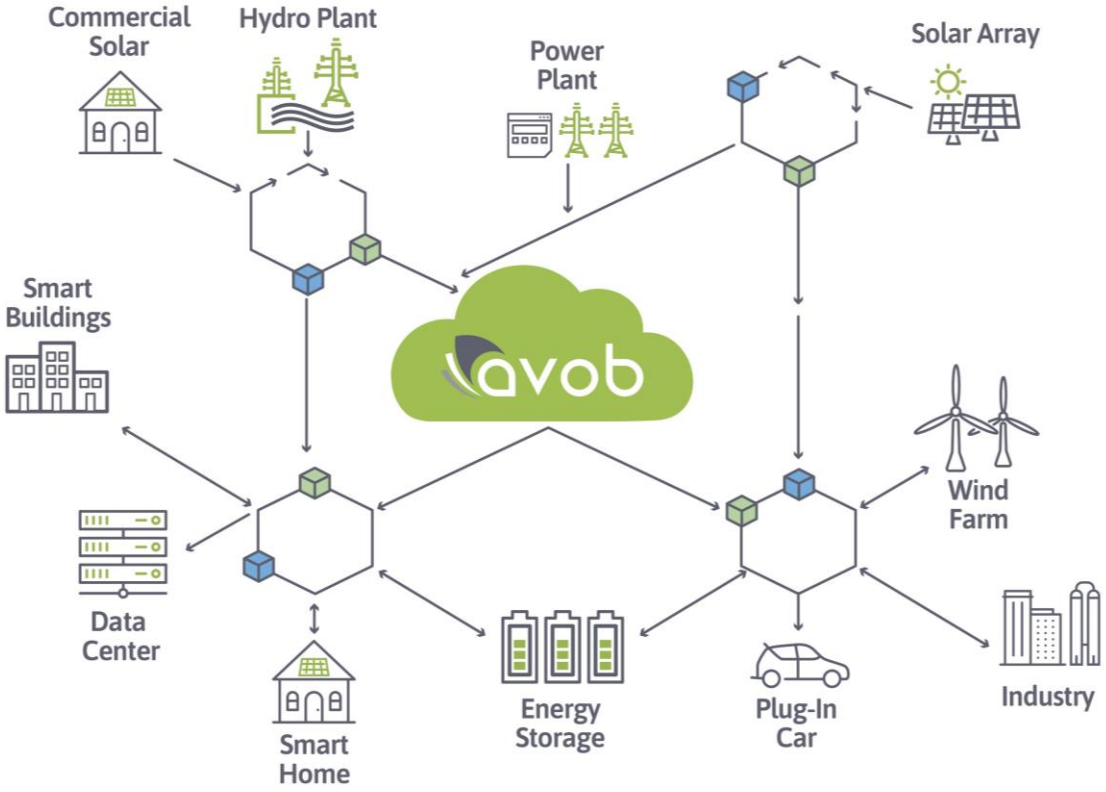
PC | BMS | Smart Meters | HVAC | Sensors | PV | Batteries

… to maximise data utilization and create advanced services

- **Energy Efficiency :** « Monitoring & Control » on more than 1000 types of devices preset in the platform.
- **Smart city** : easy connection of the various buildings types and consolidation onto the Smart City Platform. Monitoring and control of the different usages.
- **Micro – grid :** advanced algorithms to manage grid injection / self consumption / storage / sharing within the micro-grid district.
- **Load management:** Diffuse capacity aggregation, execution and acknowledgment of peak shaving orders, results verification and reporting.

Projects already started with international players

Expansion towards Smart Grids solutions



1. Efficient solutions to reduce energy consumption

2. Customers energy patterns management

3. Demand Side Management (Real time communication and control of consumption vs production)

The company

avob

March 2009

11 Employees

Several innovation awards

Allianz

Bolloré

boulanger

ELYSEE PRESIDENCE DE LA REPUBLIQUE LIBERTE EGALITE FRATERNITE

hauts-de-seine LE DÉPARTEMENT

BPCE

Groupe Pierre & Vacances CenterParcs

TNT

l'Assurance Maladie

BNP PARIBAS

webhelp

DARTY

CCI PARIS PARIS ILE-DE-FRANCE

SAINTE-GENEVIÈVE DES-BOIS 45230 - Loiret

Toute une banque pour vous

TOTAL

les Mousquetaires

VILLE DE CARCASSONNE

LINGOLSHEIM

8 years of R&D

> 100 GWh saved

> 3 Million of energy data points managed

+ 80 customers

+ 3000 sites managed

+ 150 000 licences

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