



IN GREEN Vision



Remote energy management

IN GREEN VISION® is a decision-making tool aimed at operators of buildings, offices, building blocks (joint ownership agents), building complexes or indeed industrial platforms. It allows daily optimisation and rationalisation of the use of the m².

It is based on a system specialised in energy tracking that gathers consumption data from the meters and sub-meters. It provides reports relating to the energy consumption, sends alarms, monitors and analyses the physical sizes. All energy types can be monitored (gas, electricity, water, steam, heat, etc.).

This remote management system is a true energy management pilot as well as a Web application. It enables operators to fulfil the constraints imposed by the environmental standard ISO 140001. The data that is gathered from the various meters are made available on a remote server and can be consulted by any user and via a Web navigator anywhere.

The analyses provided in the reports enable alerts to be created regarding possible behavioural anomalies, budget excess or over-consumption of energy. The potential savings are visible immediately. The system can also be parametered to send alerts by email to key users when there is a variation exceeding the demand, highlighting a difference between consumption and costs.

The data coming from a meter can be compared at different intervals (day by day, month by month, over an annual budget), or several meters can be compared over the same period.

The invoicing reports provide the way of checking the consumption and the costs compared to the supplier bills.

The system can also use the weather forecast in order to predict energy consumption, costs, calculate the carbon emissions and provide the carbon footprint per entity for the next 12 months, based on the average over 10 years of the degree-day.

The report on the maximum power demand, on the power factor and on kVA enables improved global performance of an electrical system and reduces the distribution costs (and, therefore, the service bills).

This (evolutive) energy management platform provides reports of all types and takes into consideration the new sites that are linked in.

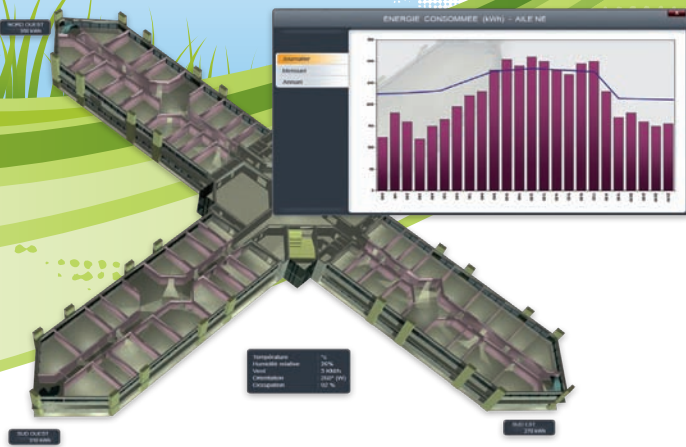
The “remote energy management” system is a communicating system that takes the information from different communication media (IP, autodial and GPRS).

ADVANTAGES

- Complements the BMS systems and installed bases (moderate integration cost)
- Provides an online tool and energy management
- Facilitates reduced carbon emissions (impact on CO₂ included in the reports)
- Predicts expenses based on degree-day history
- Informs regarding prevention
- Provides a decision-making help tool (budget, planning)
- Compares building performance
- Allows better control over energy expenses (of your bills)
- Provides access to available reports everywhere and anytime
- Offers a library of interactive report tools
- Allows intuitive visualisation and navigation

CHARACTERISTICS

- Automatic data acquisition and local storage
- Secure access
- Compatible with numerous types of meters
- Compatible with all fluid types (electricity, gas and water)
- Gathers all of the information from the meters (power factor, apparent energy, active and idle power)
- Compatible with the monitoring system installed by the customer
- Different levels of analysis and reports are possible
- Measurements at regular intervals (every 5 to 30 minutes)
- Automatic alerts by email in the case of consumption anomalies
- Support and regular reports from the IN GREEN VISION® teams
- Reports based on previous day data



SYSTEM CONFIGURATION

Minimum of one PC for the Web client
Refer to **IN GREEN VISION®**.

Web navigator compatibility

- Internet Explorer 6 or higher
- Firefox 2 or higher
- Safari 3 or higher

TECHNICAL DATA

Architecture

- Web Architecture - The Web application is installed only onto the **IN GREEN VISION®** server(s)
- The users can connect from anywhere, from a compatible Web navigator and with an authorised username and password.
- The BMS client uses the software (Microsoft) .NET that can be installed on all BMS desktops, if the **IN GREEN VISION®** monitoring system uses the data from the following systems:
 - PCVUE Arc informatique
 - SCADA CVC
 - Others

Source interfaces

The meter data are gathered using the installed BMS system. In addition to BMS acquisition, the system also supports the following communication protocols: LonWorks, BACnet, Modbus, M-BUS.

The data are also gathered:

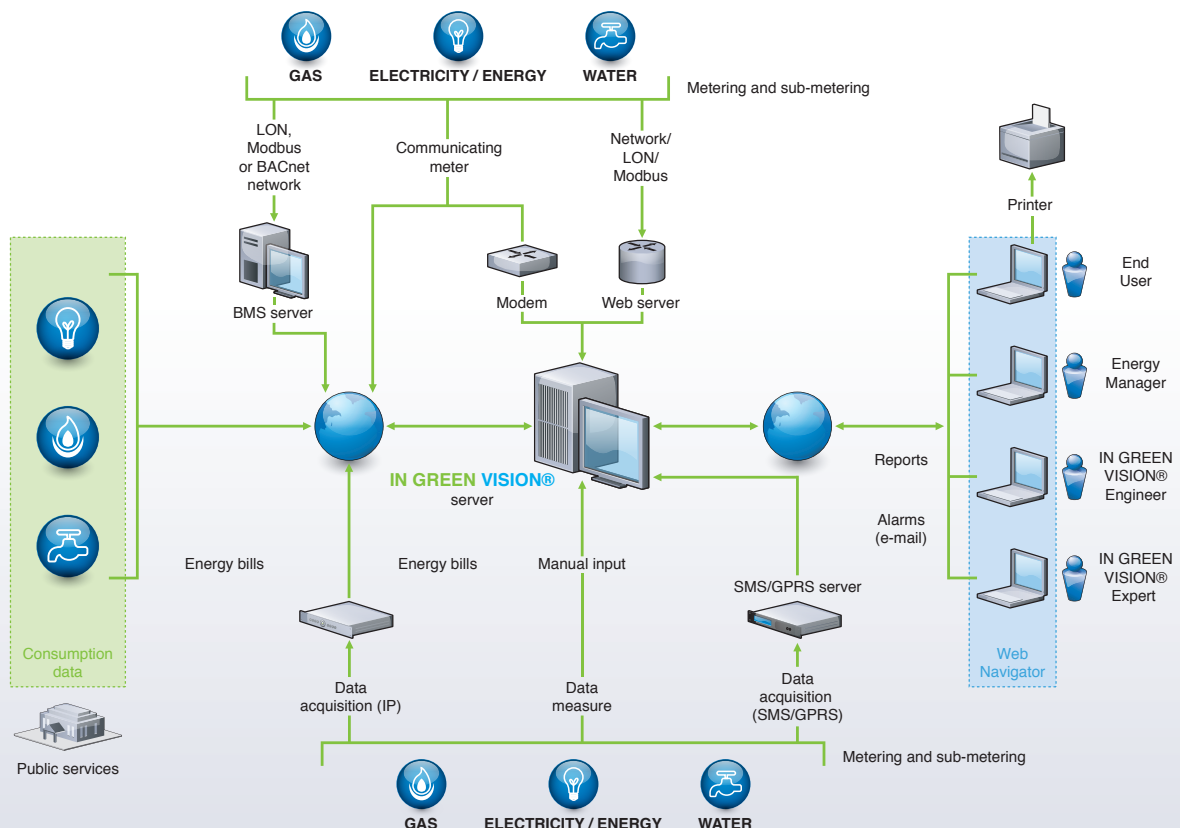
- From the meter data recorders via SMS, GPRS and the Internet protocol
- From the energy suppliers (consumption data and bills)
- By manual input of the meter statements
- From meters communicating via modem or Internet
- Via email from a Web server

Report type

- Periodic report
- Profile report
- Consumption report
- Maximum power demand report
- Power factor report
- KVA report
- Load profile report
- Alarms report
- Standardisation report
- Cost prediction report
- Invoicing report
- KPI report
- Performance report
- Sub-divisionary distribution report

User interfaces

Screen grab or print via the user Web interface for all the reports, analyses, etc. Certain reports can be downloaded as a CSV form to be used with application such as Excel.



Periodic report

Allows the user to define 12 months over a year or a month, to superpose them in order to compare them and check the consumption profile.

Profile report

Comparison of the average consumption over different periods defined by the user (periods) for a maximum of 7 profiles.

Consumption report

Enables comparison over intervals of time (daily, weekly, monthly, quarterly and annually) of up to 6 different meters for the same energy type. These comparisons can be done on one specific meter or on several meters.

Maximum power demand report

Used to determine the periods for which the maximum demand has been reached – it can help with load-sharing and can confirm the availability of the energy.

Power factor report

This report allows the highlighting of anomalies based on low power factor, which would have the consequence of increasing the idle energy and therefore have a direct impact on the bill.

KVA report

Indicates the kVA demand over a defined period by the user and gives a precise indication of the intervals when the demand is highest.

Load profile report

Calculates the possible advantages of short-term changes on a site in operation (simulation of the profit that could be made on a set-up using scenarios defined by the user).

Alarms report

Automatically sends alert messages (mails, SMS). Warns about discrepancies in averages, over consumption, threshold excesses and records the triggering value. It also sends alerts regarding communication defects.

Standardisation report

Displays the performance history based on analysis of the degree-day in comparison to a variable defined by the user, such as the number of people, the surface or the hours of operation. The report provides the building's performance history, using the regression equation (degree-day over consumption), to indicate how the building reacts to climate or other variables defined by the user.

Prediction report

Used to show the energy savings and performance, using the building performance equation based on the degree-day data average over 10 years. By selecting a date, the building performance equation calculates the consumption data from over the last 12 months using the regression analysis. By using this information, the system will predict the consumption, the costs and the CO₂ emission for the coming 12 months. In the interest of precision, the real value of the degree-day is updated at the end of each month, according to the user's region.

Invoicing report

The meter consumption tables, the various prices and the fixed costs enable verification of the energy supplier's bills. These reports can also be used to send out sub-invoices to building third-parties.

Performance indicator reports (KPI)

Consumption graphics of the performance indicators (KPI) defined by the user. First, each KPI is set-up with a consumption data recording over a regular interval of time, for example, day/week.

Performance report

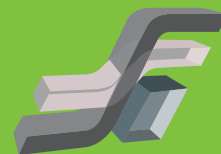
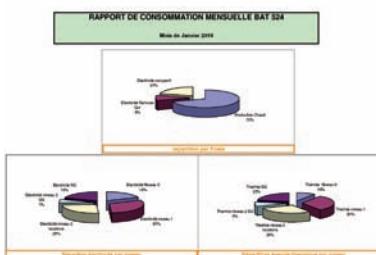
Provides a graphic representation of energy efficiency. For example, the heat or steam production ratio by a boiler compared to the quantity of gas going in (COP test for heat pumps).

Distribution report (sub-divisionary)

Provides sector diagrams showing the distribution between the types of consumption, CO₂ emissions and the costs, per meter type.

RAPPORT DE CONSOMMATION MENSUELLE BAT 524
Mois de Janvier 2010

| Compteur | Unité | Consommation | Coût | Coût unitaire |
|------------------------|-------|--------------|-------|---------------|
| Compteur Eau Chaude | m³ | 10.5 | 10.50 | 1.00 |
| Compteur Eau Froid | m³ | 10.5 | 10.50 | 1.00 |
| Compteur Gaz | m³ | 10.5 | 10.50 | 1.00 |
| Compteur Electricité | kWh | 10.5 | 10.50 | 1.00 |
| Compteur Chauffage | kWh | 10.5 | 10.50 | 1.00 |
| Compteur Ventilation | kWh | 10.5 | 10.50 | 1.00 |
| Compteur Climatisation | kWh | 10.5 | 10.50 | 1.00 |
| Compteur Eau Sanitaire | m³ | 10.5 | 10.50 | 1.00 |
| Compteur Eau Froid | m³ | 10.5 | 10.50 | 1.00 |
| Compteur Eau Chaude | m³ | 10.5 | 10.50 | 1.00 |



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