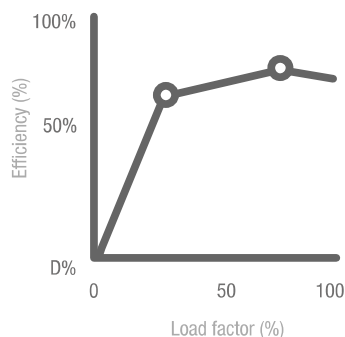The use of an energy consumption monitoring and analysis system is the prerequisite for satisfying the legal requirement (Italian Decree Law 102/2014) for **Energy Audits** for large and energy intensive enterprises; it is the essential condition for acquiring the data required by the Energy Services Operator (ESO) to issue **White Certificates**.

The outcome of the monitoring and analysis is summarised in an **Energy Audit** which sets out the energy health of the company and identifies measures for improvement. To ensure that the improvement is continuous, the Energy Audits have a periodicity of at least four years, thus verifying the results achieved and the new objectives to be set.
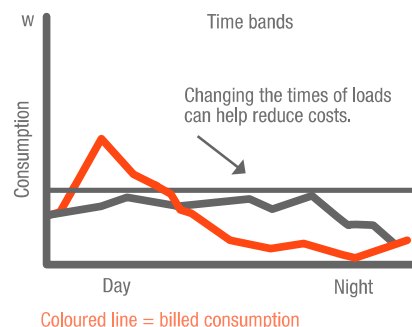
An adequate energy consumption monitoring and analysis system is the principle ally of the company's **Energy Manager** in the difficult task of planning the efficient use of energy resources.

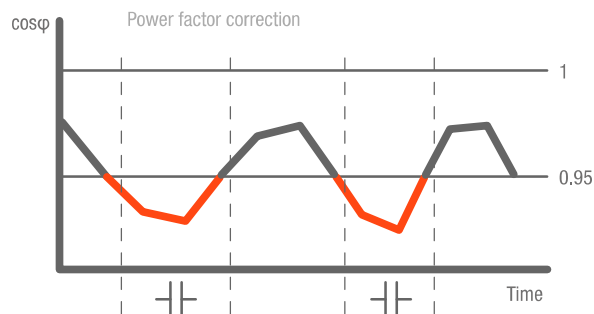We indicate below the principal factors considered in an effective energy analysis:

Using no more energy than necessary

Flattening off demand

Changing the times of loads can help reduce costs.

Coloured line = billed consumption

Avoiding penalties

Power factor correction

Identifying mains supply disturbances

ENERGY QUALITY COUNTERS

DIPS	5
SWELLS	1
INTERRUPTIONS	8
INTERRUPTIONS > 180S	6
VOLTAGE OUT OF RANGE	1
FREQUENCY OUT OF RANGE	0

OFFICES LOG FOR WEEK 4 – 2019

Division of energy

CONSUMPTION JAN-MAY 2020

General services 10%

Production 60%

Auxiliary services 30%
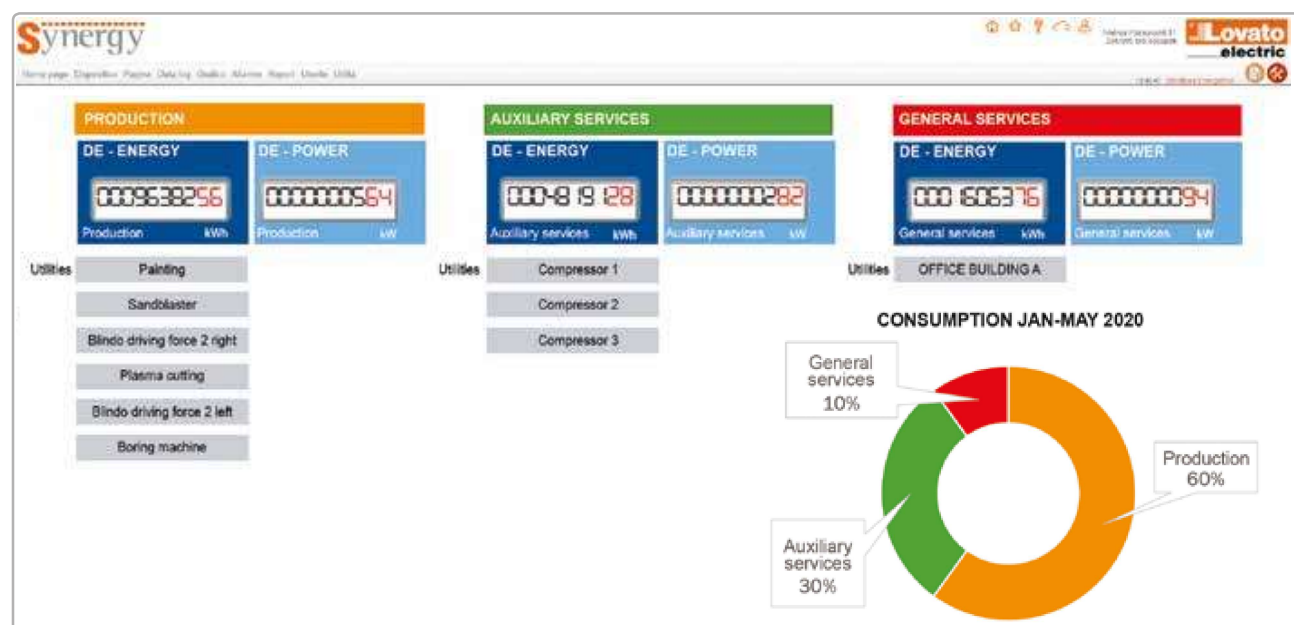
Synergy On Premises On Site
(physical or vurtual server)

Synergy
Local server

| Multimeter | Multimeter | Converter |
| DMG 210 | DMG 610 | EXC CON 01 |

LAN

Multimeter
DMG 610

Users

| Multimeter | Micro PLCs | Compatible third |
| DMG 300 | LRD... | party device |

Flow rate   Water   4-20mA
                                0-10V
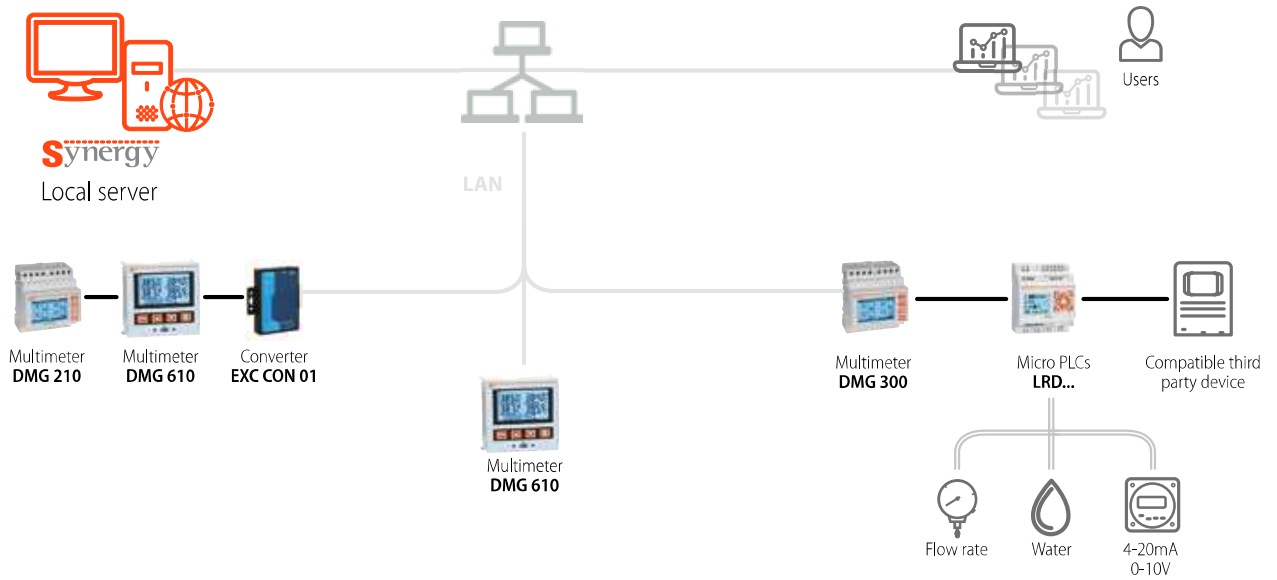
Synergy On Premises On Customer Cloud
(cloud-based server)

Synergy
Private cloud

2G/ 3G modem
EXC GL AX1

| Multimeter | Multimeter | Gateway data logger |
| DMG 210 | DMG 610 | EXC GL A01 |

LAN

Gateway data logger
EXC GL A01

Multimeter
DMG 610

Users

| Multimeter | Micro PLCs | Compatible third |
| DMG 300 | LRD... | party device |

Flow rate   Water   4-20mA
                                0-10V

————— RS485

————— Ethernet

————— Internet

————— Electrical signal

9
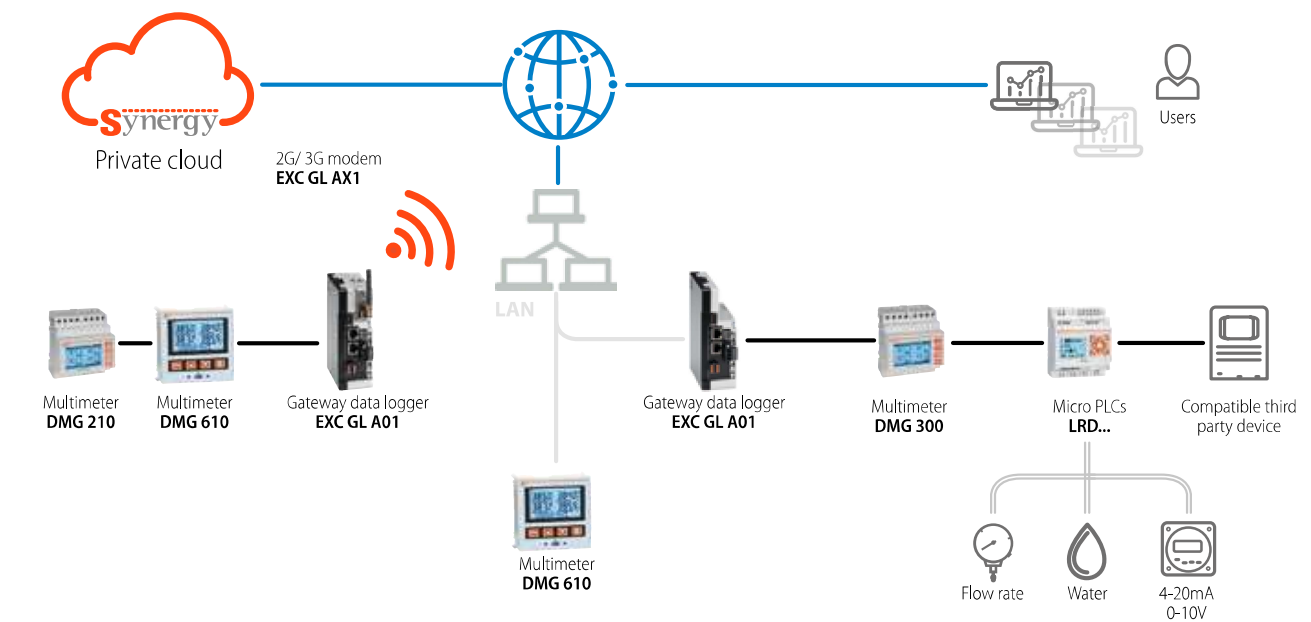
Synergy Cloud

In this solution, **Synergy** is supplied with a subscription service which provides a LOVATO Electric cloud server running **Synergy**.

Synergy Cloud allows you to check and display the electrical and power parameters of your field devices without having to install any software and without needing a dedicated server at your premises.
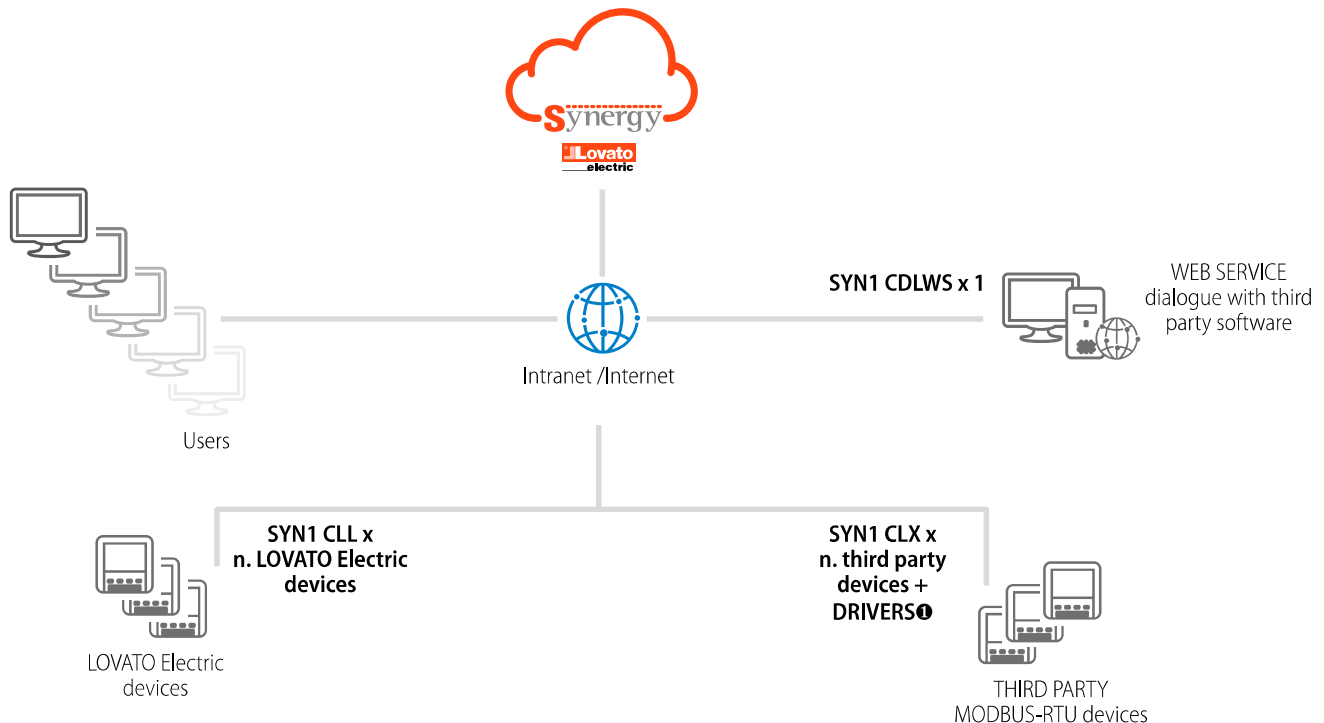
The field devices are configured as Clients which send the monitoring data to the **Synergy Cloud server**, in two possible ways:
• via https using the local **EXC GL A01 gateway data logger (recommended option)**;
• via a specific comms port assigned by the Cloud server (this must be checked by LOVATO Electric Technical Support).

The **EXC GL A01** gateway data logger collects the data from the field devices connected via an Ethernet or RS485 serial port. Supports the Modbus RTU, ASCII and TCP protocols.
Access to internet for data is provided by an Ethernet port or by adding the accessory **EXC GL AX1** 2G/3G modem.

Order code	Description	Packages
SYN1 CLL	Enables the supervision function for each LOVATO Electric device equipped with MODBUS-RTU communication port.	Annual subscription license (365 days) for each device
SNY1 CLX	Enables the supervision function for each third party device equipped with MODBUS-RTU communications port.	Annual subscription license (365 days) for each device
SYN1 CDLWS	Enables WEB API access to Synergy's MS SQL database by third-party software	Annual subscription license (365 days)

SYN1 CDLWS x 1 — WEB SERVICE dialogue with third party software

Intranet /Internet

Users

SYN1 CLL x n. LOVATO Electric devices

LOVATO Electric devices

SYN1 CLX x n. third party devices + DRIVERS❶

THIRD PARTY MODBUS-RTU devices

❶ *Contact our Technical Support office (Tel. +39 035 4282422; Email: service@LovatoElectric.com).*

Synergy
Lovato electric

Users

2G/ 3G modem
EXC GL AX1

Multimeter
DMG 210

Multimeter
DMG 610

Gateway data logger
EXC GL A01

LAN

Gateway data logger
EXC GL A01

Multimeter
DMG 300

Micro PLCs
LRD...

Compatible third
party device

Multimeter
DMG 610

Flow rate

Water

4-20mA
0-10V

LAN

Gateway data logger
EXC GL A01

Multimeter
DMG 300

Micro PLCs
LRD...

Compatible third
party device

Flow rate

Water

4-20mA
0-10V

RS485

Ethernet

Internet

Electrical signal