

# Movicon Pro.Energy<sup>®</sup>



**The Best Solution for Energy  
Monitoring and Efficiency**



# Movicon Pro.Energy<sup>©</sup>

Collecting, visualizing and analyzing energy consumption is a energy efficiency policy must. Reducing costs, increasing competitiveness while maintaining the eco-sustainability of your entire organization are the keys to your success.





# Software technology for energy efficiency



Energy efficiency is a key priority for every company. Progea offers software solutions specially designed to monitor energy consumptions that guide companies in the right direction to increase efficiency and sustainability.

Installing energy management systems is a greater priority than ever for those companies who need to improve energy efficiency and reduce consumption. Two big issues that cause a great influence on building and production costs. The introduction of strict standards now requires most companies to adopt new energy efficiency policies to comply with ISO-50001 relating to Energy Management standards or EN-15232 which categorizes energy efficiency into four types. An Energy Management system is the basis for detecting the corrective measures needed to achieve continuous energy efficiency improvements which is fast becoming a key objective of

every organization. The Pro.Energy® software empowers companies to reduce their energy costs by offering tools to analyze consumptions with the intent to improve efficiency, gain significant financial returns, contribute towards reducing pollution and create a favourable ecosafe image for the company. Pro.Energy® provides an opportunity for all manufacturing companies to confront the current energy crisis situation effectively and instigate a new set of policies that target efficiency improvements. Targets that will soon see rapid returns and important benefits as a result.

*The effective collection of local and remote production site energy consumption information is indispensable to perform analysis targeted at reducing waste and optimizing energy consumptions for efficient and sustainable energy management.*





## Pro.Energy<sup>®</sup> a simple and effective solution



Pro.Energy<sup>®</sup> empowers plants and buildings to become more efficient by detecting the key indicators (EnPIs) to determine reductions in energy consumptions and an increase in profits.

A strong company strategy plan to constantly measure and monitor electricity, gas, water, compressed air or steam usage will determine a significant save in costs and an increase in competitiveness. The Energy Performance Indicators (EnPI) provide all the information needed to monitor consumptions.

### Energy consumption visibility

The ability to collect energy consumption calculations will give users a clear and detailed picture of their energy infrastructure and utility distribution.

### Identify potential energy savings

Analysing the different energy consumption rates throughout the entire building and factory site, at different times of the day and under different circumstances, will enable you to identify and intervene in those areas that need to be made more efficient.

### Monitoring corrective action results

The benefits of results gained from previous corrective action can be monitored in real-time to assess whether further intervention should be made as part of a continuous effort for improvement.

### Document efficiencies

The all-inclusive and powerful set of energy consumption data analysis tools allows users to verify, document, export and send effective consumption reduction reports to interested parties that promote incentive-driven or certification schemes.

### Supports Energy Managers

Pro.Energy<sup>®</sup> is the best solution to aid Energy Managers and their collaborators, to analyse company consumption and manage energy efficiency through valid decision-making strategies. Pro.Energy<sup>®</sup> is a functional Movicon.NExT module that connects to a diverse range of meters installed in various types of energy carriers in order to measure consumptions in real-time, record and aggregate them in a relational database (SQL Server). This data can then be analyzed by time range, carrier or cost center and compared to other time ranges, values or manufacturing sites, independently from the data source of origin. This analysis is an indispensable tool that every Manager can rely on to ensure that the right decisions are made and implemented instantly.





# Indispensable for Efficient Energy Certification

**Normative, Certification, Incentives: Pro.Energy© offers you an all-inclusive and flexible solution for your certification systems that is simple to use.**

In today's world it is not just energy hungry companies that need to reduce consumption. The energy factor affects company costs consistently so far as to encourage companies to adopt energy efficiency programs that not only reduce these costs but to uphold its eco-friendly image as well. Modern technology monitoring systems are being used by companies to obtain the level of energy efficiency as part of an incentive offered by local governments and power companies to make energy efficiency a worthwhile investment. In addition, the increasingly strict standards penalize 'energy-hungry' companies in order to encourage them to adopt the appropriate tools for reducing consumptions and CO2 emissions.

## **The ISO 50001 Standard**

This standard provides business organizations with a reference framework to integrate energy performance in their daily activities. It also aims to promote the best practices for energy management as well as to improve projects designed to reduce emissions caused by the greenhouse effect. At a worldwide level this will enable businesses to adopt one standard and use the same methodology to identify and implement improvements. The basic structure of the standard is designed on the Deming cycle model with the philosophy of continuous improvement: Plan-Do-Check-Act approach. In order to achieve this type of certification it is essential to deploy a Monitoring and Analysis system such as Pro.Energy©.

## **Energy Managers**

The Energy Manager's job is to see that energy is rationalized in the most appropriate way. The role of the energy manager includes:

- Implementing the appropriate actions, interventions and procedures to promote rational use of energy.
- Ensuring the predisposition of annual energy consumption based on end energy user financial parameters.
- Provide energy verification data of interventions aided by state contributions.

## **The UNI EN 15232 standard**

The UNI EN15232 standard is used as a guide to define energy efficiency in buildings. This is achieved by defining four types of classes that assess what impact automation and control systems have on the energy performance of thermal and electrical installations in the building. The standard provides guidance on how to assess current energy efficiency and performance capacity of electrical systems, such as heating, air conditioning, illumination through management and control systems. It also establishes any potential savings in electricity and heating that can be obtained by deploying system automation functions specifically designed for this purpose. In order to quality for certification it is necessary to deploy a Monitoring and Analysis system such as Pro.Energy©.



# Visualizzazione dei consumi immediata, semplice e chiara



Pro.Energy® offers all-inclusive, fast, effective and transparent energy consumption visualization.

Pro.Energy® has been designed to deliver transparent visualization of all energy consumption values of entire company. These values are collected from counters and meters located locally or remotely throughout the company site. Thanks to the Movicon and Pro.Energy® technology, companies will be able to view energy information displayed on monitors locally and over the internet using common browsers, smartphones or tablets. This information will help companies to make drastic cost reductions in managing energy, maintenance and licenses. No other energy monitoring and control system available on today's market has the ability to minimize investments like Pro.Energy® can.

## The Energy Dashboard

Pro.Energy® collects and displays real-time data on dashboards with eye-catching graphics clearly showing all indicators and operating status. Operators will find it easy to monitor and control any production situation wherever and whenever simply by using the graphical web interface features. The Dashboard interface has been especially designed to satisfy the most modern ergonomic requirements. What's more, the Pro.Energy® module can be completely customised to function as a supervisor by integrating advanced management and control features offered as optionals.





# All-inclusive and efficient energy consumption analysis

Pro.Energy® offers integrated ready-to-use analysis tools based on data and cost reports, charts and tables.

The Energy Performance Indicators (ENPIs) are essential to performing consumption analysis effectively. They are the most reliable method to use when needing to analyze and improve energy efficiency through the detection and elimination of energy waste. Pro.Energy® collects all energy carrier data and records it on database so that it can then be analysed thoroughly and accurately by using purposely designed reports, charts and tables. Its reliable technology is simple to use and can be customized as required. In addition to recording real-time meter measures, the system also allows users to define and record virtual measures. Users will then be able to compare the actual behaviors with the virtual ones and manipulate virtual calculations to manage and restart specific energy logic groups based on specific meter calculations for example. Using these methods will allow Energy Managers and users to obtain powerful analytical reports containing all the information they need to identify those areas where energy is being wasted and take corrective action immediately.

1. **Consumption Reports** - Consumption data analysis in table and chart format with selectable meters, value totals with minimum and maximum calculations for selected time ranges.
2. **Cost Reports** - Consumption analysis indicating costs for each energy carrier.
3. **Behaviour Charts** - Consumption behavior charts for selected time range.
4. **Time range comparisons** - Graphical analysis comparing values calculated for different time ranges.
5. **Threshold Control** - Analysis to identify exceeded set thresholds.

This essential information will aid Energy Managers whose job it is to eliminate waste and optimize consumption. The recorded data analysis management is simple to use, yet powerful and comprehensive. All reports can be managed locally or over the Web. They can also be printed or exported in the most popular formats (e.g. Excel and PDF).

Period	Start Date	End Date	Min	Max	Avg
Period 1	01/01/2017	31/03/2017	1000	1500	1200
Period 2	01/04/2017	31/06/2017	1100	1600	1300

Group Name	Meter Name	Unit of Measure	Quantity	Consumption	Cost
Non-Group	Electric energy	kWh	1000000	1000000	1000000
	Gas energy	m3	1000000	1000000	1000000
	Water energy	m3	1000000	1000000	1000000
	Steam energy	kWh	1000000	1000000	1000000
	Thermal energy	kWh	1000000	1000000	1000000
	Electric energy	kWh	1000000	1000000	1000000
	Gas energy	m3	1000000	1000000	1000000
	Water energy	m3	1000000	1000000	1000000
	Steam energy	kWh	1000000	1000000	1000000
	Thermal energy	kWh	1000000	1000000	1000000



# Connectivity and IIoT



## Open data acquisition for total connectivity.

Pro.Energy© is based on open architecture that can be integrated with measuring tools of different types that are being used in the company. Infact, an integrated system must be capable of collecting any type of value deriving from different field devices such as multimeters, meters, PLCs and sensors.

### I/O Drivers

A vast ranging native I/O Driver library has been integrated to communicate with all measuring and control systems (e.g. Modbus, Bacnet, Konnex, LON, Simatic, Schneider, ABB, Profibus, Profinet IEC 60870, IEC 61850 and many more).

### OPC

Native and integrated OPC UA Server and Client technology.

### Networking and DB

Expansive. native and integrated connectivity for Networking and database table sharing among distributed stations using WinCE HMI panels or third party managerial systems (ERP) and business systems (SAP). Movicon Pro.Energy© is the best system for connecting field monitoring and control systems with managerial systems at-all-levels that also offers production data and energy consumption cross-referencing.

### Industrial IoT

Communication Driver for IoT system integration (e.g. data acquisition systems on public networks). PubNub, OPC UA Azure, MQTT and other protocols

## Data archiving in relational SQL Server™ database.

All process data collected by Movicon Pro.Energy© is recorded and archived for analysis by the Data Logger objects which are created automatically by the wizard. The wizard consents simple data aggregation and definition of the recording and archive management modalities. This important process is performed with the concepts of simplicity, reliability and openness. A Microsoft SQL Server license is not required for using Pro.Energy© in simple and straightforward architectures. Data tables are structured automatically and the calculation database provides all the information needed for fast and effective analysis in dashboard and in analytical report viewer objects. This simple object-oriented configuration method makes it easier for the user to customize, handle, display and record real-time data thanks to Movicon platform architecture, of which Pro.Energy© is a functional module.

### Data collection openness

The collection of measurements, operating status and alarms requires a local HMI interface on the production unit if not already available on the PLC as digital information. The Pro.Energy© architecture is ideal for connecting any display screen in a local or Web-based HMI operator panel network. Its integrated functions directly manage data collection and visualization distribution points. The user company can therefore safeguard their investment and reduce costs that would otherwise be used in financing invasive interventions.

### Data Redundancy

Movicon Pro.Energy© offers the option to apply the use of the Data Redundancy feature in Mission Critical data collection systems to manage automatic synchronization of historical data stored in PC systems with redundant communication and hardware.







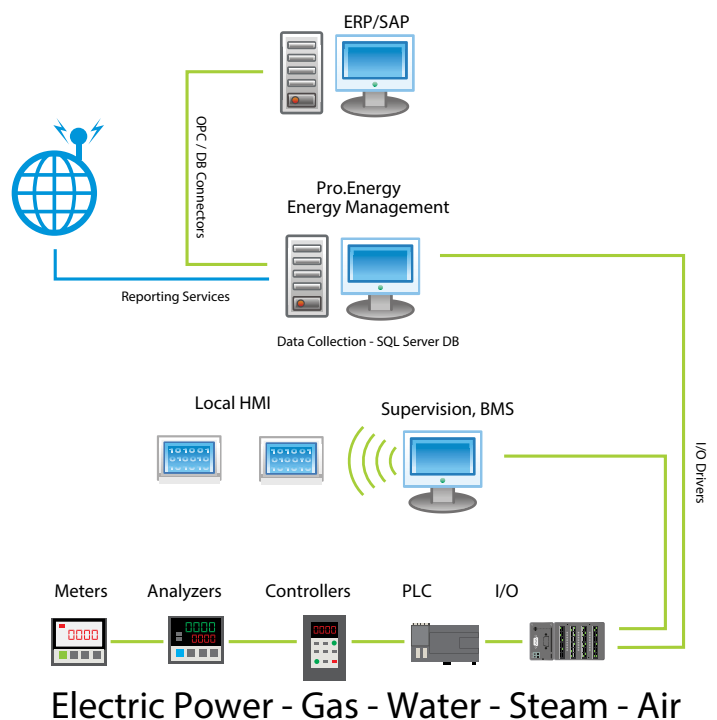
# Open and flexible architecture

## Pro.Energy@ driven by the powerful and open Movicon.NExT platform technology for data communication and recording with the option to integrate all the features of a supervisor.

When installing Pro.Energy® in your company you will get an Energy Efficient Manager system that will automatically connect directly to your preinstalled measurement systems and integrate with your production lines without you needing to worry about which connection modality to use. Empowered by Movicon, Pro.Energy® is able to provide a number of integrated solutions that enable connectivity towards production systems. This is accomplished by using native I/O drivers to connect directly to PLCs, Multimetres, Analyzers, Remote I/O, PLC or control systems. In addition, connectivity via OPC UA Client or Server towards pre-installed SCADA or HMI systems as well as towards remote telemetry devices functioning within a Internet of Things (IIoT) scenario is also possible. Data can then be collected without having to invest more in additional installations on the production side. The collected data is then aggregated and archived in Ms SQL Server relational database tables. This will enable the calculated energy performance indicators (EnPI) to be displayed locally using remote control that is provided by the Movicon Pro.Energy® Web architecture. Ultimately, the system also provides full bidirectional connectivity with ERP or SAP systems to enable total information flow at all levels.

## Much more than just energy consumption system.

Thanks to Movicon.NExT, integrating all the functions needed to create true and powerful supervision architecture is very simple. Control Logic can be integrated to manage load balancing for example, or schedulers to activate or deactivate different utilities at certain times. Control and Alarm thresholds can also be managed with subsequent diagnostics, signalling, on call duty personnel and statistics. Dynamic geographical maps can also be used to represent a series of systems distributed over different geographical areas, each one integrated with a corresponding data display window. Furthermore, all information relating to the context within which the system is installed can be added, such as production data, environmental parameters and user data.



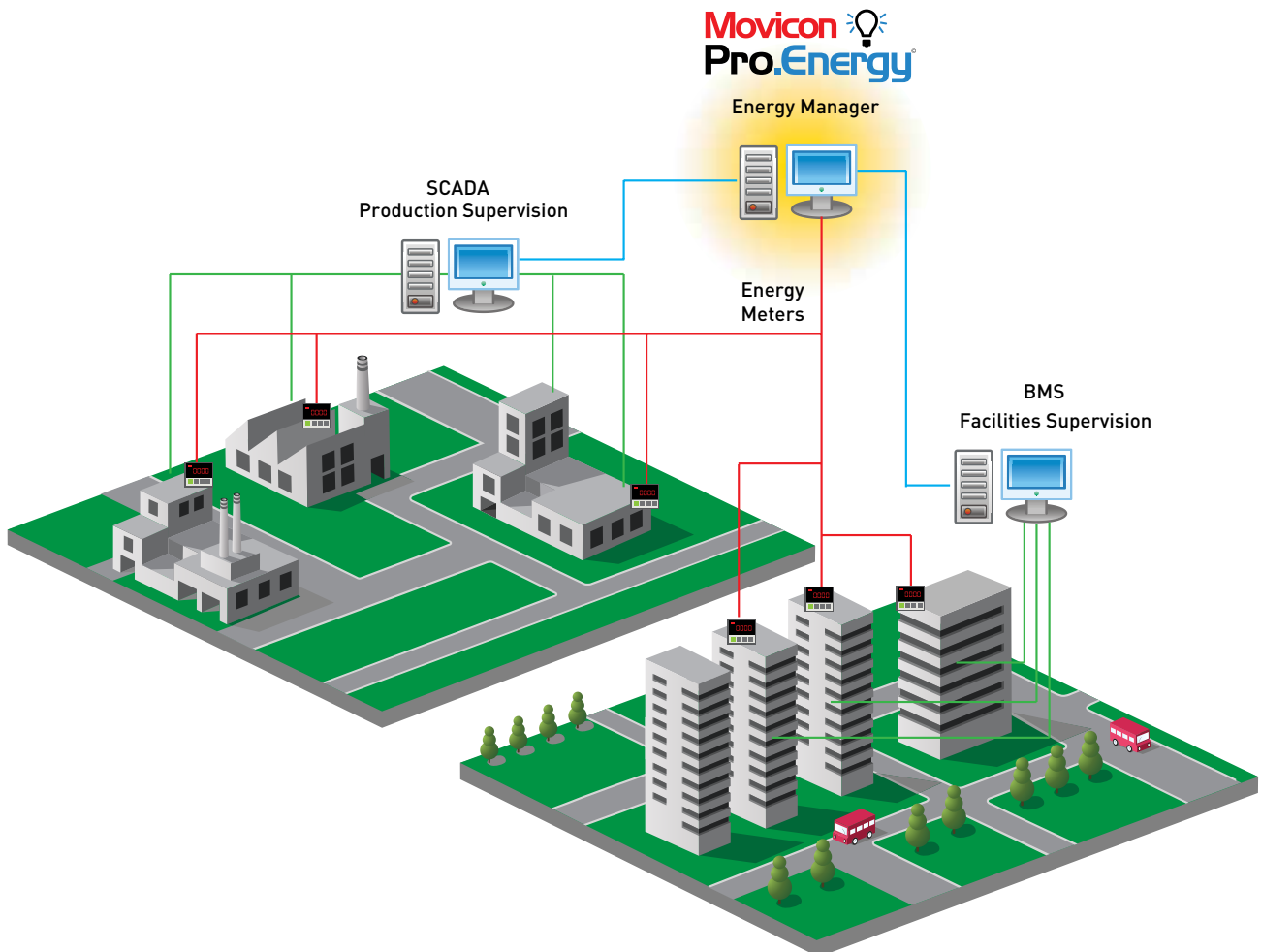


# Fast and safe investment return

## Contained investment with an immediate return on Energy Efficiency by reducing waste in any industrial sector and infrastructure.

Pro.Energy® is a standard solution used in all applications designed to collect data, analyse measures and energy consumption meters. It can be applied to buildings and infrastructures as a simple monitoring system or a supervisory system (BMS Building Management System) in combination with Movicon SCADA/HMI supervisory projects. It can be used in independent "stand alone" architectures applied as a server for the 'telemetry' of existing remote systems without changing, modifying or replacing any existing measuring and automation system. Pro.Energy® can connect to existing meters, PLCs or SCADA/HMI to collect consumption and production information from their databases.

Pro.Energy® also offers solutions for those who don't have a Supervision system (BMS). It can be used to integrate display screens and manage organization or building data. Pro.Energy® has been specially designed to minimize investments without modifying a thing unless explicitly needed. Pro.Energy® uses the best technology available for collecting, managing and analyzing energy data. It can also control and automate illumination, energy distribution and HVAC systems as well as many others.





# Key Features

## Openness

Pro.Energy® is a Movicon functional module and therefore inherits the platform's .NET, XAML, SQL Server™ and HTML5 technology.

## Simplicity and Wizards

The Pro.Energy® configuration wizard simplifies the task of selecting field variables and creates data collection databases automatically. Real-time Dashboards, calculation databases and analytical reports are created automatically with just a few clicks. Applications are easy to create within minutes.

## Standard

Pro.Energy® is completely based on standard technologies to safeguard your investment.

## Performance

Pro.Energy® ensures real-time data management and offers a structured analysis of data even in those databases containing Big Data.

## Powerful Historian

Collected data are recorded by the Historian objects and archived in SQL Server tables with automatic data recycling.

## Connectivity

Pro.Energy® integrates a vast communication driver library ready to connect to all measuring and meter devices (Modbus, Bacnet, Konnex, LON, Siemens, Schneider, Rockwell, Profibus, Profinet, Ethernet/IP and many others). The drivers include functionalities such as

automatic Tag import, remote telemetry system and IIoT connectivity. Furthermore, it offers full connectivity via OPC UA as Client and Server.

## Ready-to-use and Custom Reports

Pro.Energy® offers integrated, ready-to-use and Web-enabled Analysis Reports based on historical data. This solution also offers the option to integrate and customize your own reports using the Report Designer

## HTML5 Web architecture

Pro.Energy® offers local and web-enabled dashboards with real-time measurements and reports. Data can be accessed on the Server by using Internet browsers. Performances along with the security of the HTML5 standard ensure reductions in cost and maintenance.

## Open and customizable AnPis Analysis Modules

The EnPis analysis modules offer simple and effective solutions to obtain all the various consumption measurements of energy carriers in the most practical, quickest and open way possible. Reports, Tables and Charts can be used to perform a complete production analysis with the option to print and export their data contents. Data can be managed in custom architectures.

## Integrated Connectivity with Movicon™

In addition to being able to interface with any supervisor, Pro.Energy® also offers the great advantage of integration and connectivity with the Movicon.NExT SCADA/HMI systems.



Progea is at your full disposal to help and support you with your every analysis, Supervision or Consumption Monitoring project need. Please contact us for a demo or any further information:

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