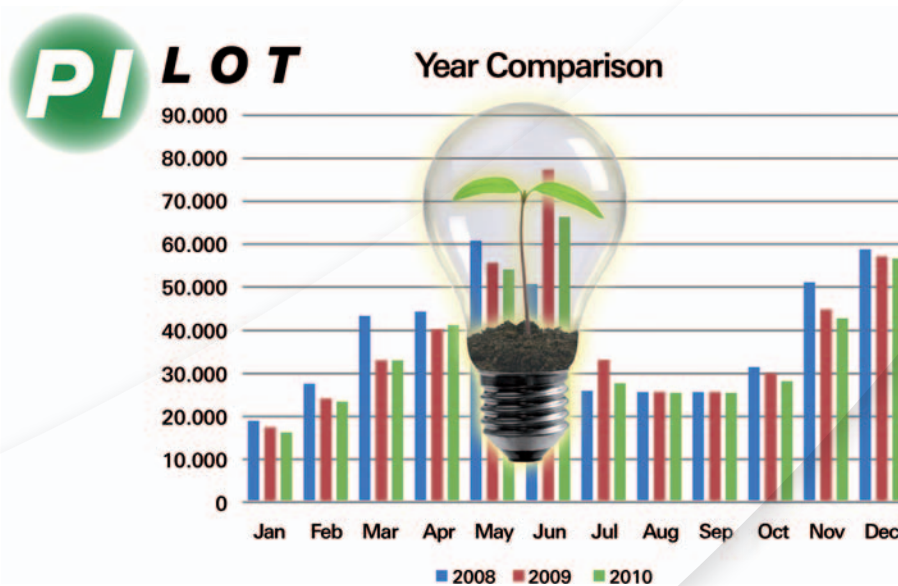


Energy Control

Maximise Energy Management in Production

PILOT[®] [green] Energy Management
for End Users and System Integrators



Transparent Energy Monitoring for efficient emission control



Fast implementation and easy of use with best practice methods



Modular system growth flexible with the demand



Measurement Box to EN16001/ISO50001

Advanced Energy Monitoring



Seamless flow of data from plant floor to MES

European manufacturers, particularly in times of increasing energy costs, have to react to global competition and manufacturing sourcing. Whilst automation solutions enable manufacturers to achieve lean manufacturing techniques based on justifications to reduce cost, eliminate risks, improve system design and manage energy use, to reduce costs by up to 15%.

Integrating shop floor Energy Management with Enterprise/IT systems is critical for obtaining best results to monitor and control energy usage.

A new way of thinking

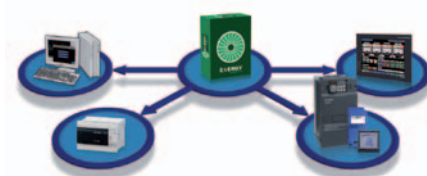
Therefore, to optimise energy usage there must be complete transparency throughout the enterprise, from shop floor to top floor. Mitsubishi Electric offers this capability through its Energy Control Pack (ECP), which collects live data from all points of energy consumption for analysis by multiple levels of management systems. Thus speeds can automatically be trimmed, loads matched and temperatures controlled in real time to achieve significant energy savings. However, to realise the full benefits of transparent energy monitoring, an analysis and emission control solution is necessary.



PILOT® [green] Energy Data Management

Felten Group, a Mitsubishi Electric partner, has developed "PILOT® [green]" – a solution for emission control in production facilities. It provides, not just an integrated analysis of the energy consumption and the CO² footprint but also data that is systematically optimised via an intelligent measurement management solution.

PILOT® [green] is a unique energy management system that has been designed to monitor all aspects in a company of energy usage and provides global dashboards, reports and cumulative reports. The production management system enables cost centres to be generated to provide detailed cost analysis data. With built-in filter functions, PILOT® [green] can produce comparisons and trend data with drill-down capability. To make energy/cost related decisions, optimised data compilations create effective reporting and analysis and energy managers can access archived data and history for appropriate energy evaluation.

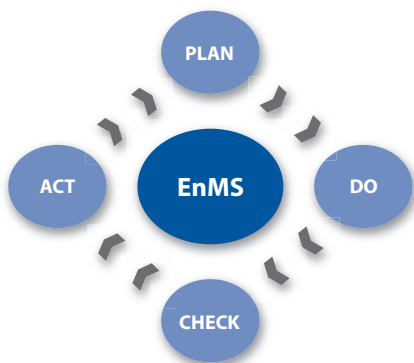


The Energy Control Pack collects live data

Efficient production management

The PILOT® [green] system has been designed in such a way that not only does it ensure more efficient production management with clear advantages in relation to conventional solutions but, for example, it supports CO²-reducing emission control at the same time as optimising future requirements. Thus, there is no additional investment required for technical infrastructure development to evaluate the relevant data and identification of energy wasting equipment.

4 steps to better energy monitoring



- Plan:** Define energy saving target by data gathering, documentation and producing key data via PILOT® [green].
- Do:** Implement an achievable continuous improvement process to meet energy savings targets.
- Check:** Monitor and document results to measure improvements.
- Act:** Implement corrective measures to continuously improve energy efficiency.

Dashboard

PILOT® [green] offers extensive support possibilities to create dashboard, trend, peak indicators and drill-down analysis for different levels of users, together with KPIs to help make energy consumption and management transparent.



PILOT® TPM dashboard

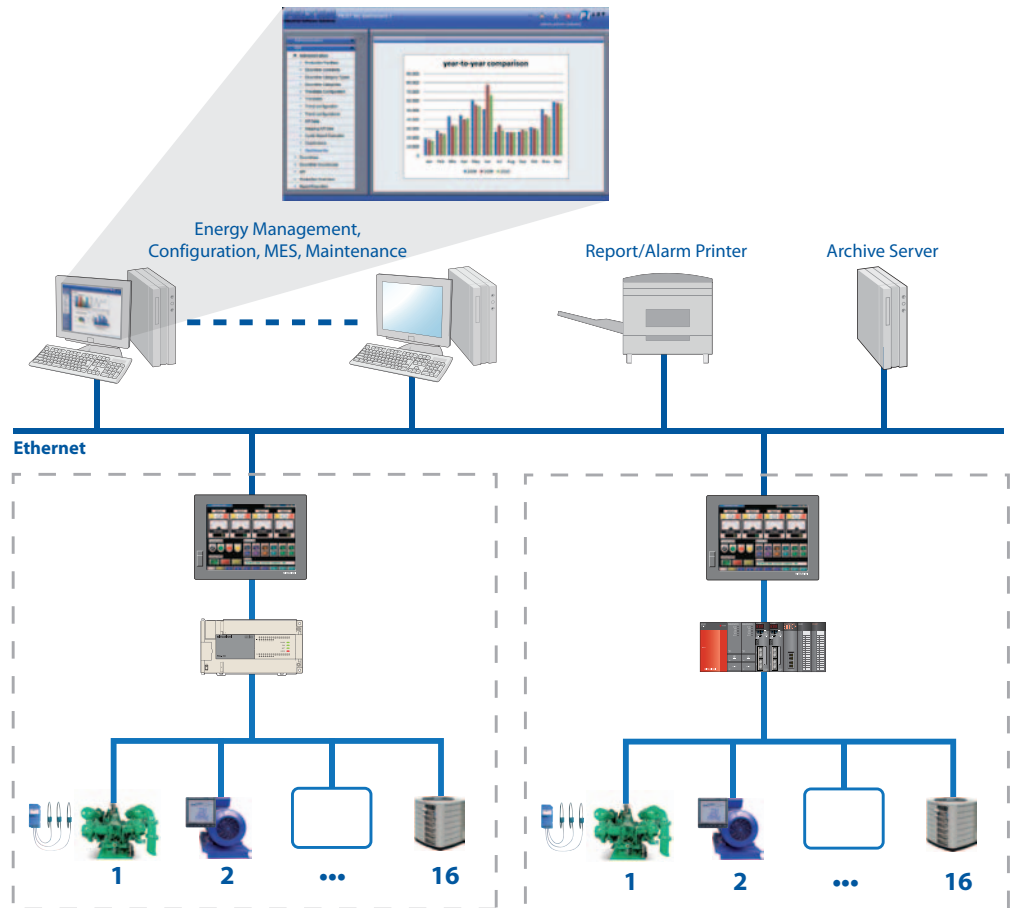
Key benefits

- Transparent energy monitoring for efficient emission control
- Reduction in energy costs per unit / items
- High investment security by next generation intelligent information system
- Fast return on investment by using management measures
- Reduction of CO² emissions
- Designed for DIN EN 16001 certification
- Comprehensive analysis, reporting and data views for management of:
 - Plant
 - Production
 - Control
 - Energy
- Production downtime and optimisation automatically monitored
- Modular design enables growth/changes to be easily catered for
- Implementation and administration meets Best Practice methods



Energy selection on plant level

Configuration ///



Typical production line architecture with intelligent automation

EUROPEAN BRANCHES

MITSUBISHI ELECTRIC EUROPE B.V. Gothaer Straße 8 D-40880 Ratingen Phone: +49 (0)2102 / 486-0	GERMANY
MITSUBISHI ELECTRIC EUROPE B.V.-org.sl. CZECH REP. Radlická 714/113a CZ-158 00 Praha 5 Phone: +420 - 251 551 470	
MITSUBISHI ELECTRIC EUROPE B.V. 25, Boulevard des Bouvets F-92741 Nanterre Cedex Phone: +33 (0)1 / 55 68 55 68	FRANCE
MITSUBISHI ELECTRIC EUROPE B.V. Viale Colleoni 7 I-20041 Agrate Brianza (MB) Phone: +39 039 / 60 53 1	ITALY
MITSUBISHI ELECTRIC EUROPE B.V. Krakowska 50 PL-32-083 Balice Phone: +48 (0)12 / 630 47 00	POLAND
MITSUBISHI ELECTRIC EUROPE B.V. 52, bld. 3 Kosmodamijskaya nab 8 floor RU-115054 Moscow Phone: +7 495 721-2070	RUSSIA
MITSUBISHI ELECTRIC EUROPE B.V. Carretera de Rubi 76-80 E-08190 Sant Cugat del Vallés (Barcelona) Phone: 902 131121 // +34 935653131	SPAIN
MITSUBISHI ELECTRIC EUROPE B.V. Travellers Lane UK-Hatfield, Herts. AL10 8XB Phone: +44 (0)1707 / 27 61 00	UK

EUROPEAN REPRESENTATIVES

GEVA Wiener Straße 89 AT-2500 Baden Phone: +43 (0)2252 / 85 55 20	AUSTRIA	Beijer Electronics A/S Lykkegårdsvej 17 DK-4000 Roskilde Phone: +45 (0)46 / 75 76 66	DENMARK	ALFATRADE Ltd. 99, Paola Hill Malta- Paola PLA 1702 Phone: +356 (0)21 / 697 816	MALTA	Sirius Trading & Services Alea Lacul Morii Nr. 3 RO-060841 Bucuresti, Sector 6 Phone: +40 (0)21 / 430 40 06	ROMANIA	Omni Ray AG Im Schörl 5 CH-8600 Dübendorf Phone: +41 (0)44 / 802 28 80	SWITZERLAND	ILAN & GAVISH Ltd. 24 Shenkar St., Kiryat Arie IL-49001 Petah-Tiqva Phone: +972 (0)3 / 922 18 24	ISRAEL
TECHNIKON Oktyabrskaya 19, Off. 705 BY-220030 Minsk Phone: +375 (0)17 / 210 46 26	BELARUS	Beijer Electronics Eesti OÜ Pärnu mnt.160i EE-11317 Tallinn Phone: +372 (0)6 / 51 81 40	ESTONIA	INTEHSIS srl bld. Traian 23/1 MD-2060 Kishinev Phone: +373 (0)22 / 66 4242	MOLDOVA	INEA RBT d.o.o. Izletnicka 10 SER-113000 Smederevo Phone: +381 (0)26 / 615 401	SERBIA	GTS Bayraktar Bulvarı Nutuk Sok. No:5 TR-34775 Yukarı İSTANBUL Phone: +90 (0)216 526 39 90	TURKEY	GIRIT CELADON LTD 12 H'aomanut Street IL-42505 Netanya Phone: +972 (0)9 / 863 39 80	ISRAEL
ESCO D & A Culliganlaan 3 BE-1831 Diegem Phone: +32 (0)2 / 717 64 30	BELGIUM	Beijer Electronics OY Peltioie 37 FIN-28400 Ulvila Phone: +358 (0)207 / 463 540	FINLAND	HIFLEX AUTOM. B.V. Jäna Derku 1671 NL-2984 CD Ridderkerk Phone: +31 (0)180 - 46 60 04	NETHERLANDS	SIMAP s.r.o. Küpeľná 1/A SK-911 01 Trenčín Phone: +421 (0)32 743 04 72	SLOVAKIA	CSC Automation Ltd. 4-B, M. Raskovoyi St. UA-02660 Kiev Phone: +380 (0)44 / 494 33 55	UKRAINE	CEG INTERNATIONAL Cebaco Center/Block A Autostrade DORA Lebanon - Beirut Phone: +961 (0)1 / 240 430	LEBANON
Koning & Hartman b.v. Woluwelaan 31 BE-1800 Vilvoorde Phone: +32 (0)33 / 921 02 40	BELGIUM	UTECO 5, Mavrogenous Str. GR-18542 Piraeus Phone: +30 211 / 1206 900	GREECE	Koning & Hartman b.v. Haarlerbergweg 21-23 NL-1101 CH Amsterdam Phone: +31 (0)20 / 587 76 00	NETHERLANDS	PROCONT, spol. s co. Prešov Küpeľná 1/A SK-080 01 Prešov Phone: +421 (0)51 7580 611	SLOVAKIA	Systemgroup 2 M. Krivonosna St. UA-03680 Kiev Phone: +380 (0)44 / 490 92 29	UKRAINE	CBI Ltd. Private Bag 2016 ZA-1600 Isando Phone: +27 (0)11 / 977 0770	SOUTH AFRICA
INEA RBT d.o.o. Aleja Lipa 56 BA-71000 Sarajevo Phone: +387 (0)33 / 921 164	BOSNIA AND HERZEG.	MELTRADE Kft. Fertő utca 14. HU-1107 Budapest Phone: +36 (0)1 / 431-9726	HUNGARY	Beijer Electronics AS Postboks 487 NO-3002 Drammen Phone: +47 (0)32 / 24 30 00	NORWAY	INEA RBT d.o.o. Stegne 11 SI-1000 Ljubljana Phone: +386 (0)1 / 513 8116	SLOVENIA	Beijer Electronics AB Box 426 SE-20124 Malmö Phone: +46 (0)40 / 35 86 00	SWEDEN		
AKHNATON 4, Andrei Ljapchev Blvd., PO Box 21 BG-1756 Sofia Phone: +359 (0)2 / 817 6000	BULGARIA	100 Kazpromatomatika Ul. Zhambyla 28 KAZ-100017 Karaganda Phone: +7 7212 / 50 10 00	KAZAKHSTAN	Fonseca S.A. R. João Francisco do Casal 87/89 PT-3801-997 Aveiro, Esigueira Phone: +351 (0)234 / 303 900	PORTUGAL						
INEA RBT d.o.o. Losinjska 4 a HR-10000 Zagreb Phone: +385 (0)1/36940-01/-02/-03	CROATIA	Beijer Electronics SIA Ritausmas iela 23 LV-1058 Riga Phone: +371 (0)784 / 2280	LATVIA								
AutoCont.S.s.r.o. Technologická 374/6 CZ-708 00 Ostrava-Pustkovec Phone: +420 595 691 150	CZECH REPUBLIC	Beijer Electronics UAB Savanoriu Pr. 187 LT-02300 Vilnius Phone: +370 (0)5 / 232 3101	LITHUANIA								