

Sample 1

PROMAR Sp. z o.o. Bydgoszcz

<http://www.promar.com.pl/>

Engineering company that has been conducting its activity since 1994. Currently, the company is the leader of the Polish market within the scope of optimisation of energy carriers' consumption and remote management of technical infrastructure in buildings.

We offer designing, execution, service, operation and monitoring services in the following sectors:

- heat supply,
- ventilation,
- air conditioning,
- remote management of technical infrastructure in buildings.

Year 2004 was critical for the company, as then it started to work on implementation of the IT system enabling remote management of technical infrastructure in facilities. It is offered on the market under the name of PROM@R MONITORING SYSTEM (PMS).

Owned brands

PROMAR, PROM@R MONITORING SYSTEM (PMS), Competition \"Controlled Energy\"

Product description

PROMAR MONITORING SYSTEM (PMS)



PROMAR Sp. z o.o. engineers have developed an original system offered on the market as PROM@R MONITORING SYSTEM (PMS). It enables optimisation of energy consumption in all types of buildings. Primary system concept is based on cooperation with each measuring device and any manufacturer's automation responsible for monitoring and control of systems in buildings.

Each PMS element has been designed in a way enabling free configuration of functionalities depending on the customer's requirements. The system makes it possible also to analyse obtained data, thus to optimise utility consumption in buildings.

PMS is offered in the SaaS (Software as a Service) concept, so costs of its implementation and use are lower than savings for the customer.

Transmission from monitored facilities is performed via GSM or Ethernet network, thus location of a monitored building has no impact on communication with the system.

Moreover, the user has access to the system via an Internet browser and so it can use PMS through any device with access to the Internet network. The system is dedicated to property owners and administrators interested in reduced energy consumption and safety of systems in a building.

While implementing the strategy of social responsibility of business, PROMAR supports development and education of the youth. Therefore, it has decided on organisation of a competition for high school students within the scope of use of alternative energy sources and control of its consumption.

Sample 2

WSK Kraków Sp. z o.o.

<http://www.wsk.com.pl/>

Factory of Communication Equipment "PZL - Kraków" (WSK Kraków) was established in Cracow in 1951. Since the end of 2006, WSK has been included in an independent capital group concentrating its actions on automotive and aviation market. It manufactures coolers, water pumps, aerospace and military products, injector testers, and heat pumps. It provides the following services:

Machining, plastic forming, repair and manufacturing of non-standard coolers.

It is the owner of the following certificates: ISO 9001, AQAP 2110, NCAGE.

Product description

Industrial institutions that need an efficient system to heat and cool large surfaces may be interested in a geothermal heat pump VATRA manufactured by WSK Kraków Sp. z o.o. Contrary to competitive solutions, the company provides high-performance high-power (up to 160 kW) heat pump with a control system, enabling its adjustment to the customer's system scheme.

VATRA heat pump is a device, in which transformation of thermal energy occurs from the lower temperature level to the higher one. In other words, heat pump collects thermal energy from the low temperature centre and gives it up to the centre of higher temperature. According to the principle of thermodynamics, heat flow occurs always from the body of higher temperature to the body of lower temperature. Heat pump conducts a reverse process. It occurs with participation of additional energy portion delivered from the outside. In the event of VATRA heat pump, this additional energy is delivered in the form of electricity to the drive of refrigerating compressor installed in the heat pump.

Energy flow in a compression heat pump occurs between the heat source of low temperature, so-called lower heat source (in the range from -15°C to $+15^{\circ}\text{C}$), and the heat source of high temperature, so-called upper heat source (from $+35^{\circ}\text{C}$ to $+60^{\circ}\text{C}$). This process occurs due to electricity delivered to the compressor's drive.

The Coefficient of Performance (COP) constitutes the measure of excellence of the heat pump. It provides information on share of driving energy in the amount of energy transferred to the upper heat source.

Value of this coefficient should be as high as possible. Then, the amount of energy consumed for the heat pump's drive "gives" the largest amount of heat to be used on the side of the upper heat source. In currently manufactured heat pumps, this coefficient ranges from 2.5 to 6.6, depending on working conditions. The lower the difference of temperatures between the lower and upper heat source, the higher the Coefficient of Performance. For the most economical operation of a heat pump, one should strive for the highest possible temperature of the lower heat source and for the lowest possible temperature of the upper heat source. Therefore, supply of e.g. central heating system with a heating agent of the lowest temperature is desired.

With regard to a type of an agent and the heating power range, we offer the following pumps:

BRINE - WATER

Heating power from 5.2 kW to 83 kW

WATER - WATER

Heating power from 7.1 kW to 122 kW

HIGH-POWER

Heating power from 51 kW to 164 kW – brine-water type

Heating power from 82 kW to 242 kW – water-water type

WSK Kraków Sp. z o.o. is also a contractor of industrial systems based on heat pumps and co-generators.

Subsidies to innovations

Implementation and development of production of heat pumps were co-funded by the European Union according to the agreement no. UDA-POIG.01.04.00-12-016/08-04 UDA-POIG.04.01.00-12-016/08-04 "Subsidies to innovations" – "We invest in your future", implemented by the Polish Agency for Enterprise Development.

Under the project of WSK Kraków titled "Industrial and development research on implementation of energy-efficient heat pumps", modern and professional station was constructed to measure parameters and conduct tests. In addition, two innovative prototypes of "brine-water" and "water-water" 15 kW heat pumps were also designed and manufactured.

WSK Kraków was the laureate of the GreenEvo project prepared and conducted by the Ministry of Environment.

GreenEvo project implements in practice assumptions of the most important strategic environmental document: the Polish Environmental Policy. It concerns technology transfer and performance of pro-environmental activities through promotion of Polish innovative green technologies.

Geothermal heat pumps of the Vatra series constitute a technology distinguished under the project. Within the framework of the project, one conducted a technological audit of the company with regard to quality of manufactured devices. WSK Kraków, as their sole Polish manufacturer, qualified to the GreenEvo project, while VATRA heat pumps were among the best and the most innovative Polish environmental technologies. Currently, with support of the Ministry of Environment, WSK Kraków performs activities aiming at promotion of Vatra heat pumps on global markets.

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Lifelong Learning GREEN POINT

This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Project No. 526638-LLP-1-2012-1-ES-LEONARDO-LMP



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