



The Pump Industry Association

The McLaren Building 35 Dale End Birmingham B4 7LN

Telephone: 0121 200 1299 Facsimile: 0121 200 1306 Email: enquiry@bpma.org.uk

British Pump Manufacturers Pump Industry Association Sustainable Energy Strategy – Executive Summary. August 2007

The British Pump Manufacturers' Association (BPMA) is a trade association representing the interests of UK suppliers of liquid pumps and pumping equipment.

BPMA's prime mission is to influence the business environment in the interests of the competitiveness and profitability of the UK Pump Industry through a range of services and via regular meetings of members.

BPMA members are the leading companies in the field of pumping technology in the UK with a commitment to product quality and development, value for money, safety and after sales service.

BPMA members account for approximately 85% of the £900 million plus UK market for pumps and in addition are net exporters.

BPMA members have committed to the Sustainable Development of their industry throughout its Product Life Cycle and want to achieve financial, environmental and social excellence.

The BPMA has identified that the most significant impact of pumps on the environment is their energy consumption during use and therefore has prioritized the development of a Sustainable Energy Strategy for the UK Pump Industry.

The British Pump Manufacturers, Pump Industry Association's Sustainable Energy Strategy is to change the habits of pump users in the way that they purchase and operate pumps so that their energy use is minimized.

The strategy will be delivered by the introduction of a BPMA education and supplier program which will integrate the benefits of advanced pump and system design, testing, expert pump selection, installation and operation to minimise the energy consumption of pumps in use. Ongoing monitoring and validation of pump systems through their lives will be an important part of the program to maintain energy reduction benefits.

The BPMA Education and Supplier program will include the following elements:-

- Advanced Pump Design, Testing and validation by Voluntary pump labeling where appropriate and agreed with stakeholders..
- System design and best practice education.
- Expert Pump Selection Tools to optimize pump and system compatibility.
- Pump Installation and Operation Training
- Pump System Validation and through life monitoring and certification.
- The Development of Appropriate Guides, Standards, Incentives and Legislation.
- Proactive marketing of the Benefits to the supply chain and pump users of the BPMA Education and Supplier program.
- Delivery of the program to end users and purchasers in the form of training, guides, procurement and minimum performance standards.

The BPMA will develop best practice guides for other elements of sustainable development in its products life cycle to continue to reduce the impact of the UK Pump Industry on the environment. Opportunities will be sought to develop competitive advantage for UK Pump Companies through the supply of environmentally friendly products.

The Market Opportunity

On an Industrial site with an electricity bill of £150,000 a year, an average of £100,000 a year will be spent on running electric motors. Pumps are the single largest user of electricity in industrial and commercial applications in the United Kingdom consuming 47.24TWh of electricity which in turn represents some 32% of all electric motor consumption in industry and commerce.

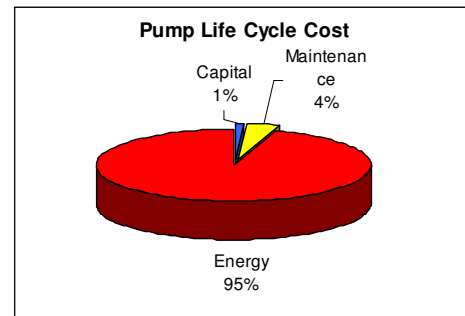
The number and types of pump applications is large and diverse, ranging from water utility supplies through industrial and chemical processes, agriculture, to heating and cooling applications in buildings

Energy costs have become volatile with Oil, Coal and Gas prices at record levels and significant opportunities have been identified to operate pump systems more efficiently, reducing energy consumption and running costs by 30 to 50%.

The UK government has set an objective to reduce emissions of carbon dioxide by 20% on 1990 levels by 2010 with 60% reduction by 2050. Motors account for 40% of total Electrical consumption and with pumps comprising nearly a third of this there is considerable scope to reduce carbon emissions through measures to improve pump 'system' efficiency while reducing the cost of ownership for users. Energy represents 95% of a Pumps Life cycle cost so the opportunities for savings are substantial.

Energy efficiency assistance has been granted to business through the enhanced capital allowance scheme in the form of 100% first year capital allowances for energy saving investments in approved efficient systems and equipment such as Electric motors and Variable speed drives for pumps.

High Efficiency Electric Motors and the use of Variable Speed drives has gained increased acceptance in the utilities and building services industries and their use on pumps has saved an estimated £74M in energy costs since 1998, equating to 3.5TWh of electricity.



A significantly higher opportunity to save energy exists through better pump selection, improved system design, pump/system optimization and system control. Many systems were never designed with energy efficiency in mind and incorrect pump and system matching and operation can result in significant amounts of wasted energy.

There are many simple actions that can be taken to improve pump and system operation with up to 50% energy reduction possible without major capital investment.

The British Pump manufacturers Association, its partners in Europump and the Carbon Trust have produced a number of guides and tools to use to reduce the energy consumption of pump systems.

These tools are not widely applied and through its Sustainable Energy Strategy the BPMA is committed to changing the habits of pump users in the way that they purchase and operate pumps so that their energy use is minimized.

The BPMA Sustainable Energy Strategic Action plan will be developed through workgroups of specialists in their particular fields. These Groups will be integrated into the BPMA existing Working group structure. (Council – Technical – Training – Marketing)

Energy Steering Group

Develops, Directs and Monitors the Strategy Implementation and ensures achievement against Key Performance goals, reporting to the Council of the BPMA and its members.

Actions:-

Engage BPMA members to participate in the development and delivery of the Strategic Plan.

Put in place effective consultation process with members

Develop action plan with key actions and dates for completion

Co-ordinate the activities of the working groups

Establish strong links with key organisations that can facilitate delivery of the plan

Liaise with FES on energy efficiency priorities and assist delivery of their programme. (MTP) and EuP directive

Put in place effective communication channels so that new developments as they arise within the energy arena can be inputted to the strategic plan.

Energy Technical Group

(Design, Test, Standards, Legislation & Labelling)

Develops best practices for pump design, testing, application and operation of systems.

Establishes, where practical, market acceptable energy labelling schemes.

Liaises with other sub committees to ensure that appropriate, standards are up to date and relevant and that guides and legislation are formalised to ensure sustainability of any programme that is established and to facilitate delivery of the strategy”

Actions:-

Review Relevant Standards and Regulations and improve/amend/instigate new Standards as necessary regarding relevance to energy performance (ISO-CEN-Building Regulations-WIMES etc)

Review Pump Test Standards – Methods – Facilities – Site Testing

Develop better design/selection tools and best practice guides, Eg.Pump System Improvement Modelling Tool (PSIM)

Develop material for Industry and end customer training.

Develop labelling proposals or other alternative method of pump differentiation for input into the EUP consultation process for pumps and review feasibility and desirability of extending labelling for high volume pumps.

Collate pump performance data. Agree potential pumps types to apply minimum standards to label and appropriate test methodologies.

If labelling is agreed for certain pumps, prepare voluntary minimum standard for efficiency of pumps and formulate a draft directive in the form of a briefing note.

Prepare voluntary minimum standard for efficiency of pump systems and develop auditing guide/standard.

Specify requirements for non intrusive strap for pump system auditing and manage the project to develop.

Develop Pump/System Audit Guide for ongoing system certification (Eg. PSAT – Pump System Assessment Tool)

Develop procurement guide/tools to allow purchasers including Government bodies to purchase more energy efficient pumps and systems - Develop LCC standard format for inclusion as Standard into pump Quotations

Formalise Education –Supplier – Auditing programme into guide or standard seeking accreditation if possible.

Energy Training Group

(Training and Accreditation)

To develop a structured Supplier scheme training plan and a pump system auditor programme to achieve the BPMA's Sustainable energy strategic objective, utilising the training material and resources currently available and by directing the Technical group to develop additional materials as required

Actions:-

Develop the Structure and Elements of the BPMA Educational, Supplier and Auditor scheme with view to certification/accreditation.

Interface with the other Groups on elements required to establish a credible BPMA scheme

Develop Training Plan to use Tools developed to disseminate and train best practice with regard to energy within the supply chain, utilising On-line training, web-based tools, courses and the media.

Marketing Group

Raises the profile of BPMA through its marketing of the BPMA educational resources and Supplier scheme. Promotes procurement, selection, installation and operation of energy efficient pumps and systems. Promotes and manages the delivery of the BPMA educational and supplier scheme.

Establishes Baseline energy measurements and monitors ongoing key indicators of improvement.

Interfaces with key stakeholders.”

Actions :-

Research pump market and gather further data on sales and distribution of pumps by type and application to establish base level energy consumption in the UK against which to monitor progress.

Identify Key Industry and Government bodies to liaise with during this programme and lobby Key Government bodies for financial support to execution of plan and for financial incentives for manufacturers and users to use high efficiency/low carbon equipment and systems.

Raise the profile of the BPMA while marketing the BPMA Education and Supplier Program

Market the Circulator labelling program throughout the supply chain and any future labelling schemes.

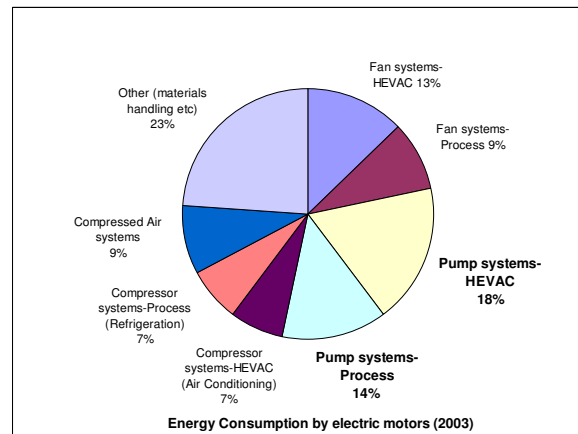
Market the benefits of High Efficiency motors and the use of VSDs. Formalise a Voluntary Agreement for manufacturers to only offer High Efficiency motors with pump products E.g. ECA compliant

Market to the supply chain the correct configuration and matching of pumps, motors and systems. Achieve Best Practice levels or minimum standards.

Market the ECA scheme for pumps categories and any new financial incentive schemes that may emerge.

Market Drivers

A number of drivers are combining to urge the BPMA and its members to immediate action. In order to take both a responsible attitude as well as to 'lead' any future voluntary or compulsory legislative requirements, BPMA members will focus on what is needed in the industry on a short, medium and long term basis and develop a plan for ongoing activities. The government has set down very ambitious goals for the UK to reduce greenhouse gas emissions with a 20% reduction in carbon emissions by 2010, working towards a 60% reduction by 2050. To achieve these targets there is likely to be a range of voluntary and compulsory legislation introduced in the next few years. The Government in support of its policy on sustainable products has implemented the Market Transformation programme. Through this programme, motor driven systems have been identified for action. It is estimated that over 11 million motors with a total capacity of 90GW are installed in UK industry. On an average industrial site, motor systems account for two thirds of the total electricity used and are responsible for about 40% of the UK's total electricity consumption.



Motors are used in a wide variety of applications, dominated by pumps, accounting for 32% of industrial motor energy consumption. The motors in the remit of MTP, includes all electric motor types above 1.1kW.

Through a number of meetings the BPMA and its members have presented to Future Energy Solutions who manage the MTP a number of potential actions for energy reduction. The Government pressure for action has resulted in a policy document which is published at (www.mtprog.com). This policy document contains three strategy tables, the first providing an action plan for motors and variable speed drives (VSDs), the second for fans and the third for pumps.

A Voluntary Energy Labeling scheme has been introduced for Domestic Circulators. The implications of the emerging Energy Using Products Directive (EuP) is that further pumps may be identified for consideration for voluntary labeling www.ecomotors.org

It is important that the BPMA continues to shape the actions outlined in the MTP policy document and in the development of the plan to implement the EuP directive. FES have been invited to participate in the development of the BPMAs Sustainable Energy Strategy so that it is aligned to achieve the outcomes which meet Government requirements.

In Europe through the SAVE directive there is pressure to reduce Energy consumption and Carbons Emissions. The Motor Challenge (<http://energyefficiency.jrc.cec.eu.int/motorchallenge/index.htm>) has been running since February 2003 and has promoted energy reduction through publications and its annual EEMODS Conference. (<http://www.eemods.de>) and continues to apply pressure for improvements in motor driven systems. UK government has acted in response to this through initiatives managed by The Carbon Trust, including Energy auditing programs within the Climate Change Agreements, Free Energy Audits for large users and by introduction of the Energy Efficiency Accreditation scheme. www.carbontrust.co.uk

European pressure has culminated in the Ecopump Initiative by Europump who represent all of the National Pump Trade Body's (http://work.sitedirect.se/sites/europump/europump/p4169/files/Ecopump_statement.pdf). This strategy will be developed to harmonize with the work within the Ecopump programme.

In the United States of America, the pressure from The Department of Energy is expressed through the Pump Industry in The Hydraulic Institutes "Pump Systems Matter" programme. (http://www.pumps.org/public/pump_resources/pump_systems_matter/index.html)

A number of other initiatives and legislative instruments are also related; Climate Change Levy, Energy Efficiency Commitment (EEC), Building Regulations (Part L), EU Directive on energy end-use efficiency and energy services, EU Emission Trading Scheme, Clean Development Mechanism (CDM) and the Joint Implementation Mechanism, Enhanced Capital Allowance, Energy Using Products Directive.

Further details of these may be found in the document "BPMA Sustainable Energy Strategy. DRAFT – For Comments Only December 2005" produced by Sustain for the BPMA to shape this strategy.

The driving influences for action are overwhelming and have accelerated the need for speedy development and implementation of this strategy