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THE EUROPEAN MOTOR CHALLENGE PROGRAMME

Management Policies Module



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1. Introduction to the Management Policies Module document

This document is subsidiary to the Motor Challenge Programme (MCP) "Partner Guidelines". It describes energy related Management Policies that MCP Partners might consider integrating into their Action Plans¹. In particular, it explains what a Partner does for each of the following steps of participation in the Motor Challenge:

- **Inventory** of energy related management policies and practices
- **Assessment** of the applicability of possible energy saving policies and practices
- **Action plan**, that defines the management policies and practices that the Partner has decided to institute, in order to reduce operating costs by improving energy efficiency
- **Annual report** of progress on the Action Plan.

The Commission recognises that changes in Management Policies and Practices can involve complex strategic or operational parameters. Therefore, a Partner may adopt, modify or ignore any of the elements of this Module, as the Partner deems appropriate. The nature and the format of any commitment and of reporting is up to the Partner.

Achieving and maintaining optimal energy related operating costs in Motor Driven Systems is not a "one shot" operation. Partners should consider integrating energy considerations into the management policies and procedures for:

- **design** of new motor driven systems;
- **choice of system components**;
- **installation** of motor driven systems;
- **ongoing operation and maintenance**.

In deciding on the applicability of improved Management Policies, Partners might use the following questions as guidelines:

- **What is at stake?** What are the companies annual energy costs? If known, what proportion is in electricity, and specifically in motor driven systems²? What are the non cost implications, in terms of production reliability and product quality, of the operation of motor driven systems?
- **Who is responsible?** Is overseeing energy costs assigned to a particular post within the company structure? Note that in a large company, this might be a full time occupation for one, or even several, persons. Does the company dispose of sufficient competence (internally, or through outside service providers) to evaluate energy savings measures?

¹ Refer to the "Partner Guidelines" for an explanation of terms such as "Partner", "action plan" and "commitment".

² In most industrial establishments, with the exception of process industries like aluminium which directly use electricity, the bulk of electricity consumption is in motor driven systems. Note that potential savings are often in the 30% to 50% range.

2. Inventory of Energy related Management Policies

A first step in investigating the applicability of improved Management Policies is to establish an "Inventory" of the current status of integration of energy considerations into existing policies and practices, concerning each phase of system life cycle: design; component choice; installation; O&M. Policies and practices should be evaluated according to the following criterion.

"Does this policy take into account long term operating costs in general, and energy costs in particular? Does the current practice optimise service rendered as compared to long term costs?"

3. Assessment of possible energy saving Management Policies

Improvements in management policies aim at creating a positive trade off between:

- **effort**, both human and financial, in the form of better design, investment in higher performance equipment, improved installation, optimal operation and maintenance procedures;
- **payback**, both directly, through **energy savings**, and indirectly, through **higher quality and reliability**, or through **positive publicity**.

Life cycle costing

Directly or indirectly, evaluating the balance between effort and payback will involve some form of "life cycle costing" (LCC). This means integrating long term costs into the management decision process. Applying LCC can be simple or complex, for instance:

- simple rule of thumb. To evaluate competing options for an equipment purchase, compare:
Initial purchase price + 3 x (annual energy cost for the option)
- Net Present Value. Carry out a full discounted cash flow analysis, integrating cost elements such as energy, maintenance, decommissioning at end of life, etc.

The choice of the appropriate LCC method will of course depend on the size and complexity of a particular investment decision. Furthermore, in today's competitive business environment, most companies outsource at least some aspects of the design, installation, operation and maintenance of Motor Driven Systems. Thus LCC must be applied both to internal decision processes and to purchasing and outsourcing practices. The MCP "Tool box" offers examples of possible LCC tools.

The Inventory (see above) will have identified areas where modifying existing policies and practices might lead to savings. In order to take appropriate measures to save energy, steps to integrate energy into management priorities could be considered³:

- Define management responsibilities for maintaining systems at optimal energy consumption levels

³ Energy Auditing, Monitoring and Targeting (EAM&T) is a proven management methodology for creating defining and following up on management responsibility for energy consumption. See MCP Tool Box

- Install energy metering equipment at the appropriate operational level (shop, cost centre, ...) in order to identify specific measures to save energy;
- Institute appropriate energy cost reporting, so as to facilitate monitoring of energy consumption;
- Integrate energy costs into profit centre cost accounting, on the basis of measured energy consumption.

A second category of possible management action concerns integrating energy considerations into each step of motor driven system life cycle, by:

- Explicitly integrating energy performance criteria into internal design procedures
- Integrating life cycle costing into competitive bidding processes
- Requiring equipment suppliers and service providers to specify the energy performance of their equipment or service;
- Instituting company wide purchasing policies on specific energy efficient technologies (for instance require Eff1 motors, pumps in the top procurement class, etc). Specify these technologies in calls for tender offers;
- Integrating energy considerations into operation & maintenance practices.

Of course, possible savings will have to be compared to the investment of precious time and money. The results of the assessment might take a form similar to the following table.

Policy area	Assessment results				
	Specific proposed action	Estimated annual direct and indirect savings	Investment cost (1)	Annual O&M cost (1)	Estimated payback time (months)
Internal design procedures					
Equipment Purchasing and Service Procurement practices					
Operation and Maintenance practices					
Energy use measurement					
Energy use cost accounting					

(1) Investment and O&M costs are estimates of changes in costs, with respect to what would have been spent without Partner commitment to the Motor Challenge. This may be, for instance, additional investment for higher performance equipment, or increase/decrease in maintenance costs. It may also cover the cost of changing some management practices.

Of course, the cost and savings calculations proposed can rarely be carried out precisely for general policy and practice issues: they will generally be limited to qualitative or order of magnitude estimates.

4. Action plan

If your company decides to implement new or improved energy related Management Policies, this could be integrated into your Motor Challenge Programme "Action plan", indicating the measures you have decided to implement, and the time scale for implementation. Such an action plan might be presented as follows.

Policy area	Specific policy or practice improvement	Time table (1)	Expected savings (MWh/year)
Internal design procedures			
Equipment Purchasing and Service Procurement practices			
Operation and Maintenance practices			
Energy use measurement			
Energy use cost accounting			

(1) **Time table.** The time scale at which the action will be implemented. This might be a specific period or date, or might depend on some other action, for instance, creation of an annual environment report, or as part of the ISO 14000 accreditation process.

5. Annual Report

Your company may choose to make an Annual Report to the Commission on progress made in carrying out the Action Plan. If so, the following reporting format could be used with progressive updating on an annual basis. The two left hand columns are copied from the Partner's Action Plan.

Action Plan		Annual report for year 20xx
Actions decided upon to implement energy savings measures	Time scale for action	Progress on action, and comments where appropriate