



NATIONAL ENERGY CONSERVATION CENTRE

INDUSTRIAL TEM PROGRAM

ENERCON

CAPITAL INTENSIVE IMPROVEMENTS

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Capital Intensive Improvements – improvements to increase the energy efficiencies of facilities, production equipment or processes that require significant capital expenditure. Capital costs for implementing these measures can be paid back rapidly by energy cost savings. Funding of these items should be of high priority since they have high payback rates at low risk. If internal funds are not available, external funding at favourable rates may be available from a number of sources.
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CAPITAL IMPROVEMENTS OFFER LARGE SAVINGS, LOW RISK

Whereas significant energy savings can be realized by implementing no cost/low cost energy conservation measures, much larger savings, in the range of 20-30%, are often possible through changes in equipment or processes. The price for these greater savings is the expenditure of capital funds. However, by careful selection and evaluation of such changes, the monetary value of future energy savings should provide a high rate of return on the initial capital investment. Moreover, the high rate of return is gained at low risk; the technologies involved have been proven and the savings are predictable.

JUSTIFICATION FOR CAPITAL IMPROVEMENTS

Justification for capital improvements is the responsibility of management. Whereas the Detailed Energy Survey will provide recommendations for capital improvements, management must also consider a number of other factors:

1. *Plans for existing facilities*, i.e. changes in production, demand for product, projected life of equipment, etc.
2. *Compatibility with associated equipment* and production flow
3. *Need for replacement* or modernization of equipment
4. *Cost impact on production* during changeover or replacement
5. *Cost and availability of capital funds*
6. *Internal requirements for return* on capital investments.

In some cases, DES recommendations should be followed up by a detailed feasibility study, evaluating the technical and financial viability of a given project.

In many cases, justification for capital improvement projects represent the sum effect of a number of considerations in addition to those related to energy savings.

FINANCING CAPITAL IMPROVEMENTS

In some cases, the capital funds will be available from internal resources such as reserve funds, positive cash flow, or established credit lines. However, in other cases, especially when large sums of capital are required, external sources of funds will be necessary.

Funding may be available from commercial banks or from various other sources such as the World Bank, the Balancing, Modernization and Rehabilitation Program of the Government of Pakistan, or the Energy Commodities and Equipment Program of USAID.

ENERCON SUPPORT FOR CAPITAL IMPROVEMENTS

ENERCON goals with regard to capital improvements are two-fold: first, the maximum number of energy-related capital investment projects must be analyzed; and second, no financially attractive project should fail to be implemented due to unavailability of financing.

ENERCON can help you obtain more information on local and foreign sources of financing, such as those mentioned above.

For certain capital-intensive energy-saving projects, ENERCON is funding bankable feasibility studies which can be used as the bases for qualification for loan money. ENERCON can also recommend consulting engineering firms specializing in certain technical areas for feasibility.