

Barriers for Energy Efficiency

Title:

Lack of expertise and resources during the energy audit field study

Category:

Energy audit work in the field

Summary:

Many of the audit firms prefer methods which just focus on the cause and not the effect during the plant studies of the energy conservation measures. This is most often due to lack of theoretical background and measurement resources. This results in poor exploration of hidden opportunities and inappropriate analysis of the findings.

Back ground:

This barrier can be illustrated by a classic example. An energy audit was carried in a south-India based plant by a relatively unknown firm. The firm gave an estimated saving potential of 2% of the total plant consumption.

After two months of the audit by this firm, again a reputed auditor was given the contract for the audit as a cross-check by the plant. The reputed firm conducted a thorough, detailed and instrumented audit and estimated the saving potential as 12% of total energy consumption. The plant was surprised to find that all the suggestions, given by the reputed firm, were practically implementable inspite of increase in the saving potential. The plant recommended the auditor to its corporate office for auditing other plants of the group.

Plant study of the detailed energy audit broadly consists of

- ☞ Detailed measurement /recording of various energy related parameters of various energy consuming equipment
- ☞ Operating performance / efficiency evaluation of the equipment by using the portable equipment
- ☞ Conducting the trials and demonstration using instruments and expertise
- ☞ Evaluation of mass and energy balances
- ☞ Knowledge of latest technologies and application potential
- ☞ Evaluation of specific energy consumption and comparison with best practicably achievable values
- ☞ Transfer of technology
- ☞ Application potential of various energy saving retrofits
- ☞ Identification of measures and brain storming along with the plant personnel
- ☞ Over all Evaluation system

It can be seen that the conduct of a detailed study is possible only with the required resources with respect to expertise and instruments. Instruments play a vital role in data generation while expertise is required for the interpretation of the data.

In India, most of the firms lack sufficient resources to conduct an effective field study thereby resulting in inappropriate analyses. In these cases the auditor resort to the simple measures such as insulation, arresting steam and compressed air leakages, replacement of steam traps, use of maximum demand controllers and use of simple retrofits. They use thumb rules to see the application of these simple retrofits also. They may not suggest the specific suggestions, which will reduce the energy consumption very significantly.

Message learnt:

Lack of expertise and resources during the plant study of energy audit will result in poor exploration of the hidden energy saving opportunities and may also lead to wrong analysis.