

Article # 23

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Become Energy Efficient. Change Colours Like a Chameleon

Food for thought about industrial energy consumption norms.

Section 13 of the Act says

“Power and Functions of Bureau – The Bureau shall,

13 (a) “Recommend to the Central Government the norms for process and energy consumption standards required to be notified under clause (a) of section 14”

Furthermore section 14 says

“Power of Central Government to enforce efficient use of energy and its conservation-The Central Government may, by notification, in consultation with the Bureau”

14 (g) “Establish and prescribe such energy consumption norms and standards for designated consumers as it may consider necessary;

Provided that the Central Government may prescribe different norms and standards for different designated consumers having regard to such factors as may be prescribed”

Whenever a Government prescribes such a medicine, the hues and cries about unnecessary Government interference get louder. Is it really interference or just a sensible way to use Government regulatory power to stop unnecessary waste in some firms? My point of view is that such a regulation forces firms to increase their profit. Others may argue against it pointing out it is not the Government business to assist firms to make more profit. No matter which position is taken, we may agree that benchmarking and comparing energy performance of firms within a sector help to establish for the nation, the sector and for the firms own benefit her position with respect to energy conservation. Setting fair consumption levels and judging energy conservation efforts for a sector is a long drawn process. In any case we need to compare apples with oranges, whether we like it or not. There are usually no two identical plants of the same age, operating the same equipment, manufacturing the same product mix, and using the same energy mix.

In cooperation with the industry associations for the cement industry and the pulp and paper industry and their respective research entities, the National Council for Cement and Building Materials (NCCBM), and the Central Pulp and Paper Research Institute (CPPRI), BEE has initiated a pilot project in support of establishing norms for energy consumption standards in both sectors.

The approach is a twelve step procedure closely linked to the mandatory energy audits and Clause (o) of Section 14:

“Direct any designated consumer, who does not fulfill the energy consumption norms and standards prescribed under clause (g), to prepare a scheme for efficient use of energy and its conservation and implement such scheme keeping in view of the economic viability of the investment in such form and manner as may be prescribed”

The twelve steps are

Step 1: Each firm of a sector consuming more than 30,000 tones of oil equivalent per year, or having an installed capacities of more than 5 MW electricity connected load, self declares their plant configuration and process technology.

Step 2: Each plant also self-declares their specific energy consumption with respect to the product mix based on kWh electricity and kCal of fuel consumption.

- Step 3: All company data submitted is compiled on the websites www.energymanagertraining.com and www.igeep.org and available only to the company.
- Step 4: The company may review their data online and update online as they wish. However the website keeps track of all updates.
- Step 5: As soon as a sufficient data base is available (50% of all firms in a sector), a comparison and colour coding of firms will be done to establish the performance bandwidth of the sector with respect to energy consumption. Since apples are compared with oranges there is a certain bias in the colour rating of gold, silver, bronze, and tin, with newer, larger plants being favoured.
- Step 6: To take out some bias there is a second colour rating and scale of 1 to 10 which judges the efforts of a firm to reduce energy consumption according to the provisions of the law.
- Step 7: Based on the provisions of the Act the firm hires an accredited energy auditor and conducts an energy audit.
- Step 8: The self declared energy consumption data and plant configuration is validated by this audit and if necessary adjusted and reported online.
- Step 9: Furthermore the firm designates/ assigns a certified energy manager in charge of implementing the firms energy conservation policy and energy conservation measures.
- Step 10: The firm selects technically sound and financially attractive recommendations from the energy audit report for implementation.
- Step 11: The firm prepares a three year business plan to implement the selected recommendations within the financial means of the firm.
- Step 12: The energy manager of the firm reports on an annual basis progress on implementation as well as verified energy conservation and cost reduction.

A recommended rating for efforts under step 6 could be:

- 1 point for having a designated and certified energy manager appointed;
- 1 point for having conducted an energy audit through an accredited energy auditor and validation of self declared energy consumption data;
- 1 point for having submitted the energy audit to BEE in electronic form;
- 1 point for having prepared a three year business plan;
- 1 point for submitting the business plan in electronic form to BEE or designated State Agency;

The remaining 5 points could be distributed based on the degree of implementation and documentary evidence of verified energy savings and costs. Satisfying the formal requirements of the Act will already result in a 5 point effort level, while any Gold or Silver standard in efforts depends on the level of successful implementation of energy conservation measures.

It is therefore quite possible that a firm which is rated as Bronze with respect to its specific energy consumption may be rated very high at 8 points and have a Gold standard with respect to efforts to reduce this relatively high energy consumption. We cannot expect from a 30 year old plant of obsolete technology and small capacity to get the same result as from a new, large capacity plant.

Completing a first three year cycle it is possible to establish fair norms of standards of energy consumption of a firm within a designated consumer group.

One lesson learned in doing this exercise together with the industry association and their research institutes is:

“There is so far little reliable and validated performance data available. The task of setting norms for standards for a designated consumer may therefore result in a GiGo effect (garbage in, garbage out) as long as there is not an agreement with the sector association to first collect and undertake analysis of an entire sector data as proposed in this pilot effort”.

However any newly constructed plant should at least satisfy the standard of the best in the sector, or be even more energy efficient.

Interested parties may view the taken approach on the site at www.energymanagertraining.com/ecsectors.php. We are interested to get as many critical and constructive opinions about the approach, and welcome recommendations for improvement. There is as usual nothing final and bad concepts become good concepts and good concepts become even better concepts as long as others critically review such efforts.

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