

## Comments on Draft Methodological tool: “Tool to determine the baseline efficiency of thermal or electric energy generation systems”

Comment 1.

Line 9 / Page 2/6. Subscript 1

Comment on subscript 1.

1. This tool is not applicable to systems that use multiple fuels or different qualities of fuel within the same fuel type.

**Comment:** While it is possible to maintain the quality same in case of fuels like oil (hydrocarbon with homogeneous composition); it is very difficult to expect the same quality to be maintained in case of solid fuels like coal/lignite/biomass etc, which are more heterogeneous in nature.

Hence, where fuel switching (Change in Quality of same fuel) is contemplated, Provision as under may be made. in , line 17 ,Page 4/ 6

(i) Measure efficiency of the energy generation system in different load points for different quality of same fuel as described below.

### **Additional point:**

The thermal or electric energy generation system can use the data generated based on day to day operation for a period of one year from commercial operation and fit a curve for efficiency and load to arrive at base line efficiency for the unit which can be used for evaluation of performance of the system for subsequent period of operation. In this period of one year, different qualities of the same fuel would have been fired.

Conducting snap test on the operating system once in 2 years thereafter can validate the performance.

While conducting the tests as above, it is to be ensured that the boiler and the system is operated by maintaining optimum operating parameters like excess air, inlet temperature of water into the system etc. since results from such tests truly project the carbon emission.

## Comment 2

Line 10/ Page 2/6.

The tool can be applied only if load is the main operating parameter that influences the efficiency of the energy generation system.

**Comment:** Generally, the efficiency variation in the control range of the boiler viz.60 to 100 pct load is practically nil while firing same quality fuel and maintaining same excess air levels and rated output parameters corresponding to that load.

This aspect may be factored in.

## Comment 3

Page 3/6 Option A;

Page 5/6 Option D.

In the competitive environment, the load efficiency function furnished by manufacturers cannot be taken for granted unless performance guarantee tests are conducted and the values are validated.

In some cases the manufacturers may either pay a penalty for not meeting the performance requirements or refer some contract clauses w.r.t input parameters of fuel and operating conditions to defend deficiencies if any.

Hence these options may not be considered at all since scientific methods are available..

## Comment 4.

Page 5/6. Option C

Option E

This is a direct measurement method, which can be safely applied in case of liquid fuels.

In case of solid fuels like coal, biomass etc, determination of quantity of fuel burnt is difficult. Also, the calorific value of the fuels may vary. Hence, where solid fuels are used, indirect method (i.e. based on losses) may have to be adopted.

Comment 5.

Page 6/6. Option F

While clear scientific methodologies are available, this option may not be required.

Comment 6

However, wherever heat input into the boiler is less than say 100 MW equivalent, options C, E and F can be considered.

Option B is ideally suited for all cases.

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