

**Minutes of Meeting**

Name of the committee	Date & Time	Venue
Second Technical Committee Meeting of Microwave Oven Labelling Program	22-02-18 (3:00 – 5:00 PM)	Conference Hall, Bureau of Energy Efficiency

Beginning with the course of discussion, Sh. Sameer Pandita, Director, BEE welcomed all the technical committee members. Subsequently, the following points were discussed.

**Agenda of the Meeting:**

- Analysis of data received from Manufacturers
- Need for third party testing to validate the data
- Qualification criteria & development of energy efficiency matrix
- Next steps and Way Forward for the labelling program

**Discussions**

- BEE gave brief background about First Technical Committee meeting on Microwave oven labelling program and sought manufacturers support in implementation of Microwave oven labelling program.
- Detailed analysis of the data provided by MWO manufacturers on
  - 1) Standby Power
  - 2) Microwave Function Efficiency
  - 3) Energy Consumption

was thereafter discussed with the members of the Technical Committee

**Standby Power:** The standby power of the various models (with and without display) was plotted on a graph to analyse the distribution of the standby power. From the analysis it was inferred that spread of standby power values varied from as low as 0.2 W to as high as 1.2 W. Therefore, it was proposed to set the ceiling limit for standby power at **0.5 W**. It was informed that this value would be a pre-requisite for a Model to qualify under the program.

**Microwave Function Efficiency:** The microwave function efficiency of the various models of different capacities ranging from about 13 Lts to 45 Lts was plotted on a graph w.r.t Efficiency to analyse the distribution. It was inferred from the plot that Microwave function efficiency was independent of the capacity. Thereafter, it was proposed that microwave function efficiency of **56%** shall be a pre-requisite for a model to qualify for the program.



**Energy Consumption:** The energy consumptions of the various models of different capacities were plotted with respect to Energy Consumption per cycle (Wh ) on a graph to analyse the distribution. It was inferred from the plot that energy consumption was independent of the capacity and a single star label table would suffice for all the categories of the MWO namely the Solo, Grill and the Convection. Based on the Analysis following table was proposed by the chair for star label of MWO:

Labelling scheme	
Energy consumption (E) Wh per Cycle	
$53 < E \leq 58$	<b>1-star</b>
$48 < E \leq 53$	<b>2-star</b>
$43 < E \leq 48$	<b>3-star</b>
$38 < E \leq 43$	<b>4-star</b>
$E \leq 38$	<b>5-star</b>

- During the discussions, manufacturers submitted that Energy Consumption of 38 Wh per Cycle was very difficult to achieve and therefore needed a relook. They also submitted that by the virtue of functionality, convection MWO were more energy intensive compared to the other two categories of MWOs. Manufacturers were of the view that the value of 38 Wh was very stringent and may lead to a situation wherein no convective oven being sold in the market becomes eligible for a Five Star, thereby adversely impacting the sales of Convective MWO markets.
- Manufacturers also suggested that the standby power values may go up with the requirement of EMC compliance which would require additional filters to be Installed in the Convective MWOs. However, BEE clarified that additional circuitry /hardware will not increase the standby power values drastically.
- BEE suggested that to address the concern of manufacturers, it would conduct random testing on a few MWO i.e. on a sample of (around 14) to validate the data and Manufacturers claim. BEE requested the manufacturers to volunteer by providing MWOs for testing. It suggested that cost of testing would be borne by BEE and the models in the sample would be decided by BEE. BEE informed that the testing would be conducted as per the IEC: 60705 and IEC: 62301 and BIS: 11676. However, it was clarified that in absence of NABL accreditation available with any of the Indian LABs for testing Microwave ovens the outcome of the test details would be just to validate the claims of the Manufacturers through an independent laboratory which would then be used as an indicator/vectors to develop the program. BEE informed that the Labs shall be hired by it through a limited tendering process, keeping in with the codal formalities.

*Signature*



- Manufacturers suggested that the sample size may be increased a little to accommodate various kinds of sample. To this, BEE clarified that larger sample would take longer to test the samples and that BEE would randomly check-test the samples during the voluntary phase of the scheme and any discrepancies found in the present rating system would be fine-tuned accordingly if need be.
- Various labs were asked about the approximate time of testing for the complete sample size and it was informed that the testing of up to 20 samples could be completed within 2.5 months.

### Decisions

Consequent to the detail deliberations, following action plan was decided:

- BEE agreed to revisit the star label table and make necessary changes, if need arises based on the analysis of the indicative test results is completed.
- BEE encouraged the manufacturers to share data of all MWO models manufactured by them with BEE to further refine the values in the table.
- Manufacturers agreed to provide MWO samples at the test lab(s) for testing on voluntary basis and disposing it off at their own cost.
- BEE informed labs that the testing would be done as per the following test standards until BIS updates its existing standards to align with the relevant IEC standards:

Test Standard followed		
Energy consumption	Standby power	Efficiency
IEC 60705	IEC 62301	IS 11676 (IEC 60705)

- Labs informed that it would take at least 2-3 months for testing of the complete sample size of 14 MWOs.
- It was decided that the next technical committee meeting will be convened after the testing of MWO samples is complete and analysis is done.

Meeting concluded with vote of thanks from the chair.

*[Signature]*  
28/2/18

**Annexure  
Technical Committee Members**

<b>S.No</b>	<b>Name</b>	<b>Designation</b>	<b>Organisation</b>
1	Mr.Sameer Pandita	Director and Chairman of Technical Committee	BEE
2	Mr. Rajeev	Project Engineer	BEE
3	Ms. Meenakshi	Project Engineer	BEE
4	Mr.Manish Kumar	Project Engineer	BEE
5	Ms.Neha Kumari	Project Engineer	BEE
6	Mr.Mohd.Furqan	Manager Q& Technical	Haier
7	Mr.Vijay Kumar	Assistant Manager	BSH
8	Mr.Rajat Varshney	Assistant Manager	ERDA
9	Mr.K.C.Chaudhary	Senior Manager	VOICE
10	Mr.Ankush Gupta	Senior Manager	Panasonic
11	Mr.Himanshu Gupta	EPA	UL India
12	Mr.Saurabh Nag	Program Manager	UL India
13	Mr.Vikram Trivedi	PGH Microwave	Godrej Appliances
14	Mr.Akshay Bokade	Assistant Manager	Godrej Appliances
15	Mr.Nikhil Kumar	Assistant Director	NABL
16	Mr.Kapil Joshi	PBH	LG Electronics
17	Mr.Aditya Anil	Manager	LG Electronics
18	Mr.Rohit Singh	Head Corp Affairs Planning & Strategy	CEAMA
19	Mr.Yatin Kamboj	Deputy Manager	Whirlpool
20	Mr.Sunil Dhiman	Manager	Whirlpool
21	Mr.Kamal V Dhar	Product Manager	Samsung
22	Mr.Gaurav Gupta	Manager	Samsung
23	Ms.Ritu Ghosh	Head,Corp Affairs	Panasonic India
24	Mr.Mohit Verma	Manager	PwC India
25	Mr.Arun Sharma	Manager	Bureau Veritas
26	Mr.Sumit Sharma	B.D.Manager	Bureau Veritas
27	Mr.Anurag Pachori	Assistant Director	CEA
28	Mr.A.K.Rajput	Chief Engineer	CEA
29	Mr.Vasu M.S	G.M	Voltas
30	Mr.Amit Bansal	Deputy Manager	BVCPS,Noida
31	Mr.Jwalant Mehta	Consultant	PwC India
32	Mr.Nand Kumar Kushwaha	Accreditation Officer	NABL
<b>Invitee</b>			
33	Dr. Archana Walia	Director	CLASP
34	Mr. P.K.Mukherjee	Senior Advisor	CLASP
35	Ms. Neha Dhingra	Senior Associate	CLASP
36	Mr. Kishore Kumar	Senior Associate	CLASP