

# *Efficiency Standards for Water Heaters in Pakistan*

## 4<sup>th</sup> Workshop – Final Consultative Meeting

2<sup>nd</sup> March, 2022

Avari Hotel, Lahore

Hosted by NEECA & CLASP



## Background

As part of the effort to develop a broad range of efficiency standards in Pakistan, CLASP and HIMA^Verte are supporting NEECA with the development of Water heater MEPS and Labels; the overriding goal of this activity being to reduce gas consumption across the economy and contribute towards reduced greenhouse gas (GHG) emissions.

This was the fourth and final stakeholder consultation on water heaters. MEPS and labels for electric storage and gas instantaneous water heater along with their test methods were presented in the meeting. Three previous consultations have been held:

- 1st Water Heater Stakeholder Meeting – 23 September.  
Major manufacturers were briefed on potential energy, cost, and emission reductions based on experiences and technologies in international markets, and participants voiced interest in strengthening national water heater policies.
- 2nd Water Heater Stakeholder Meeting – 4 October.  
National manufacturers, the gas utility, and PSQCA were presented with international approaches to water heater efficiency, potential impacts and policy approaches in Pakistan were presented during this meeting held in Islamabad.
- 3rd Water Heater Stakeholder Meeting – 5 November.  
Manufacturers and the members of the Ministerial Working Group were presented with proposals for gas storage and gas instantaneous MEPS. International consultant Winton Smith also attended this meeting via weblink.

In addition to the above mentioned three workshop meetings a meeting with small group of water heater manufactures was held at one of the manufacturer's premises – 17 February  
Agreed to present "finalised" test methods and performance levels for gas instants and electric storage extracted from comprehensive Australian standards.

Minutes and presentation of the above workshops are available in water heater section on the following link: <https://www.clasp.ngo/pakistan-projects/>

Extensive additional bilateral consultation meetings have also been held between HIMA^Verte staff and various stakeholders to develop and refine proposals.

Both draft test method and proposed performance thresholds were circulated to all stakeholders on 25<sup>th</sup> February.

## Objective

- Present MEPS and labelling for electric storage and gas instantaneous water heater along with the test methods
- Confirmation that suppliers are all capable to meeting *at least* the minimum performance standards proposed;
- Broad agreement that the proposed test method, MEPS levels and Labelling thresholds were appropriate to Pakistani manufacturing and user conditions, and that they should be formally submitted to PSQCA and NEECA for adoption.

Please refer to the Annexes 1 for the agenda.

## Proceedings:

Muhammad Salman Zaffar welcomed all the participants and kicked off the meeting with a round of introductions. Mr Zaffar spoke briefly about previous meetings and the work done to date on water heaters.

### **Mr. Asad Mahmood – Technical Manager, NEECA**

Asad Mahmood provide the strategic background for standards and labelling within the overall government and NEECA policy frameworks, thus giving context to how the proposed water heater regulations sit within the overarching government agenda.

Mr Mahmood requested all the manufactures to write a letter to NEECA with all of their requirements regarding help/training or reduction in the tax/duty on the import of water heater parts. NEECA will take up these points requirements in the cabinet and finance department.

*One of the manufacturers asked why do we need NEECA when we already have PSQCA?*

*Mr Mahmood explained that PSQCA scope of work is very wide, they perform many other tests on the products i.e., energy test, safety test, durability test, etc. Whereas NEECA is a subset of PSQCA with the focus on Standard and Labelling. Apart from standard & Labelling NEECA is coordinating with many sectors of government including power, transport, building, industrial and agriculture. He assured everyone that in this whole process of developing MEPS and standard they are closely working with PSQCA*

*Mr. Zaffar also answered this question giving example of other peer countries, that many other countries have two regulatory bodies. One body defines the MEPS level and the 2<sup>nd</sup> body gives the star rating and implement it.*

### **Mr. Muhammad Salman Zaffar – Technical Lead, CLASP**

Mr. Zaffar started his presentation with a brief on Standard and labelling regimes across the world. He gave examples of USA, China, and other countries in which CLASP has been working on standardization and labelling. He told the audience about the benefits of the labelling regime and gave the example of a 3-star NEECA

Pakistan Energy Label for fans. This was beneficial for all first-time participants and further cemented the concept in the minds of participants that have been regulars in water heater meetings.

Mr. Zaffar recapped the main points from the last workshops and briefed the audience on the work done to date for water heaters. He highlighted that PSQCA has adopted the revised MEPS and test standard for gas storage water heater but the labelling regime is yet to be finalized. He also briefly recapped some of the ideas presented previously on how to improve the efficiency of their water heaters.

Mr Zaffar restated our suggested revisions to the storage performance requirements – and it was clearly stated by Mr Mahmood that this would not be possible as they are now locked in and cannot be reviewed for at least a year. To this Mr. Zaffar replied that we at CLASP note that and hope that when it is possible to make revisions our suggested performance levels will be considered for inclusion to which Asad Mahmood replied in affirmative.

#### **Mr. Tajammal Shahzad – Representative, Water Heater Manufacturers**

Mr Tajammal initially thanked CLASP and NEECA for providing a platform where manufacturers can put their point of view. He said that many of stakeholders were not aware of the concept of standards and labelling before the CLASP and NEECA workshops. Further, through these workshops, manufacturers have learned about the gas shortage issue in Pakistan and how much gas is being consumed yearly.

Tajammal said that the workshops have sowed a seed in manufacturers to improve their water heater for better efficiency. The manufacturers have started research and development to change their 40 year old design. He said *“from the clasp presentation and document, we have found a design of Helix baffle and experimented with it. This has result in 5 to 7% in thermal efficiency.”*

He spoke of a need for proper labs from govt. for their testing of products. He further added that manufacturers want govt. and CLASP to provide technical help for the upgrade of their in-house labs.

Regarding the proposed performance levels, he spoke about the proposed level of instantaneous gas water heater being a little stringent and suggested a more lenient MEPS.

He requested the govt. to invest in technology of the Heat exchanger and Burner. Once these products are manufactured locally it will boost the water heater industry. He said the manufacturers supports the goals of the government and would like to develop more efficient water heaters for the Pakistani market.

*Mr Wasim Mirza Director PSQCA responded to few points: He mentioned that PSQCA has good labs and they should visit it. They are already doing the sampling testing over there. He mentioned that burner design development has been given to PCSIR and they are working on it.*

*Mr. Zaffar added that if the manufacturer develops their inhouse labs, then NEECA can accredited their lab for testing as well.*

*Manufacturer highlighted the point that to avoid scaling inside the tank inside glass coating or varnish is very important. But this needs a huge investment in Pakistan. So, the govt. should help them in developing a plant.*

*Mr. Mahmood responded that this is the area where manufacturer can be innovative and offer their after-sale services model. They can send their plumber after a year for descaling and cleaning of the tank.*

### **Mr. Stuart Jeffcott – Team Lead, CLASP**

Mr. Jeffcott gave presentation on the performance measure and test method for electric storage and instantaneous water heater. He told the audience that for the electric storage the parameter to measure efficiency is heat loss whereas for the instantaneous its thermal efficiency. He said the test methods are drawn directly from existing international standards (merely removing the elements not required). The handouts of both test methods and performance measure were distributed to audience. He explained test conditions and how to perform these tests in labs. It was noted, the calculation formula in the electric storage test method gives the heat loss in kWh/24h. But the performance measure is based on percentage heat loss per hour. The formula will be adjusted to get percentage heat loss and revised draft will be circulated in a few days.

## **Key Takeaways:**

- From initial skepticism, manufacturers have increasingly understood the potential benefits of standards and labelling both for the overall benefit of the country, and for their own competitiveness.
- As a result of the S&L development process, manufacturers are already responding with significant development in products that have remained unchanged for 30 years.

However, they wished to receive additional support from CLASP and the Government in terms of:

- Development of testing laboratories
- Training in product development/ production techniques

NEECA asked for a formal letter requesting these so they can be passed to the appropriate department.

- Presentations were made on the proposed new test methodologies for gas instantaneous and electric storage water heaters (both drawn from existing international standards). For both products, the associated proposed performance requirements were also discussed in comparison with international equivalents.
- Following some discussion, (including the manufacturer observation on the proposed MEPS for instants may be a little aggressive), agreement was reached that any additional comments should be submitted to CLASP/NEECA by 14<sup>th</sup> March, with final versions of all documents being submitted on 21<sup>th</sup> March to NEECA and PSQCA for adoption.

## Annex 1: Agenda

### Efficiency Standards for Water heater in Pakistan 4<sup>th</sup> Workshop – Final Consultative Meeting

TIME	AGENDA ITEM
10.00 – 10.15 am	Welcome note & round of introductions
10.15 – 10.30 am	<b>Introductory note</b> NEECA brief, previous development on MEPS, future outlook  <i>Dr Sardar Mohazzam – Managing Director, NEECA</i>
10.30 – 10.45 am	<b>Address by honourable Chief Guest</b>
10.45 – 11.05 am	<b>A recap</b> Work done to date on water heater policy including completion of gas storage water heater regulations. (labelling & standard) PS-4858 Rev 2021  <i>Muhammad Salman Zaffar – Technical Lead, CLASP</i>
11.05 – 11.20 am	<b>Comments by water heater manufacturers'</b> Current development / industry acceleration towards efficiency / training/help required from Govt.
11:20 – 12.00 pm	<b>Draft technical regulations for electric storage &amp; instantaneous water heater</b> Test method / proposed performance requirements compliance regulations  <i>Stuart Jeffcot – Team Leader, CLASP</i>
12.00 – 12.15 pm	Q and A session – CLASP / NEECA
12.30 pm	LUNCH and informal chat

## Annex 2: List of Participants

Sr No.	Name	Organization
1	Wasim Mirza	PSQCA
2	Ismail Khan	PSQCA
3	Tajammal Shahzad	Canon
4	Danish Munir	Waves
5	Bilal Ahmed	Career
6	Mansoor Ahmed	Intec
7	Tayyab Mahmood	Flare up
8	Shams ur Rehman	Welcome Industry
9	Muhammad Yousf	Ravi Engg
10	Abuzar Mehdi	Super Asia
11	Bilal ur Rehman	Canon
12	Javed	Canon
13	Rana Waseem Ahmad	Welcome Industry
14	Asad Mehmood	NEECA
15	Muhammad Umer	NEECA
16	Hira Ashraf	PEECA
17	Stuart Jeffcot	CLASP/HIMA^Verte
18	Muhammad Salman Zaffar	CLASP/HIMA^Verte
19	Amna Shahab	CLASP/HIMA^Verte
20	Abdul Rehman	CLASP/HIMA^Verte

## Annex 3: Photographs



