European Laboratories for a Round Robin Test of Domestic Cooktops

CLASP is seeking to organise a Round Robin Test (RRT) of a limited number of laboratories (3-4) in Europe and the UK who are accredited to EN 60350. This RRT has two primary objectives:

1) Assess the reproducibility of the draft new test standard for domestic cooking hobs developed by CLASP; and
2) Obtain comment / feedback from participating laboratories on the clarity of instruction and any suggested improvements to the test method.

With this Expression of Interest, CLASP is seeking cost estimates from interested laboratories for participating in this RRT which involves testing gas and electric cooktops using the new test method developed by CLASP.

DUE: 10 March, 2023 at 23:59 CET **QUESTIONS: sdemartini@clasp.ngo**

About CLASP

CLASP serves at the epicenter of collaborative, ambitious efforts to mitigate climate change and in the global movement for clean energy access, through appliance efficiency. Our mission is to improve the energy and environmental performance of the appliances & equipment we use every day, accelerating our transition to a more sustainable world. We work hand-in-hand with governments, experts, industry, consumers, donor organizations and others to propel policies and markets toward the highest quality, lowest resource-intensive appliances possible.

CLASP has worked in more than 100 countries since inception in 1999. CLASP is headquartered in Washington, DC, with teams in China, Europe and the United Kingdom, India, Indonesia, and Kenya. We are mission-driven and committed to a culture of diversity, transparency, collaboration, and impactful work. See our Team Page to learn more about us.

Introduction and Background

The European Commission is currently reviewing its Ecodesign and Energy Labelling requirements with regard to domestic cooking appliances: Ecodesign Regulation EC No 66/2014 on domestic ovens, hobs and range hoods and the Energy Label Regulation EC No 65/2014 on domestic ovens and range hoods. Concurrent with this review, the government of the United Kingdom (UK) is also conducting a review of these same two regulations which apply under UK law. The review of these regulations in both markets presents an opportunity to establish an A to G energy label for domestic cooktops.

CLASP has developed a new test method that can be used to measure the efficiency and emissions of gas cooking hobs and all types of electric cooking hobs. This test method can be used by policymakers to develop an A to G scale of energy efficiency for gas and electric cooktops alike, and provide other important information on emissions or product related performance metrics.

CLASP's new test method is based on the existing European Norm for electric hobs found in the standard, BS EN 60350-2:2018+A1:2021 Household Electric Cooking Appliances - Part 2: Hobs

– Methods for measuring performance. The test method developed by CLASP is designed to be representative of typical household use, and is repeatable, robust and accurate.

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1) Assess the reproducibility of the draft new test standard for domestic cooking hobs developed by CLASP; and
2) Obtain comment / feedback from participating laboratories on the clarity of instruction and any suggested improvements to the test method.

With this Expression of Interest, CLASP is seeking cost estimates from interested laboratories for participating in this RRT which involves testing gas and electric cooktops using the new test method developed by CLASP. As discussed above, the new method is broadly similar to the test method in EN 60350-2 for electric cooking hobs and thus we expect participating labs will already be familiar with the test procedure and incur broadly similar costs.

Timeline

Expected Timeframe: [April-July 2023]

Please do let us know if this timeline is not feasible for you and when this effort would be possible.

Deadline for Application: 10 March, 2023 at 23:59 CET

Application includes submitting the expressions of interest per the instructions below.

Deadline for Questions: 08 March, 2023 at 23:59 CET

All questions must be addressed in English to Sara Demartini at sdemartini@clasp.ngo. We request all inquiries be made to this e-mail address and not by phone.

Scope of Work

a) Artefact Set

In the RRT, each laboratory will follow the draft new test method when measuring the performance of four different cooktop technologies:

- Gas Cooktop
- Electric Resistive (solid / hot plate)
- Electric Radiative (radiant / infrared heater)
- Electric Induction

For the RRT, CLASP will provide one commercially available cooktop for each of the four cooktop types listed above. These four cooktops will be selected amongst the most common models on the market, based on a 60-centimetre width with four cooking hobs. In order to control costs, only one of the four cooking hobs will be tested – the 18 cm diameter hob.

In addition to providing the four cooktop artefacts for the test, CLASP will also provide a set of standardised cookware to be used in the test which consists of two different diameter pots with lids and one frying pan without a lid.

1) Stainless Steel Pot – 18cm diameter, following the specifications outlined in section 5.6.1 of EN 60350-2;
2) Stainless Steel Pot – 15cm diameter, following the specifications outlined in section 5.6.1 of EN 60350-2; and
3) Aluminium/steel Frying Pan – 18 cm diameter base, compatible with all cooking technologies including induction, design specification provided in the draft test method.

b) Technical Protocol

Participating laboratories will receive the four cooktop artefacts and a set of standardised cookware in one shipment. Laboratories will have a total of four weeks to set up and conduct the testing, and then pack-up the four artefacts and cookware and ship them to the next participating laboratory (CLASP will be covering all shipping costs). The scheduling of each laboratory will be carefully organised by CLASP with agreed arrival and shipping dates for the testing. Testing is expected to be conducted between April and August 2023.

Laboratories are invited to express interest in participating in this RRT and to provide a quote for the costs they would incur conducting this testing. For the quote, laboratories should estimate the cost to conduct testing of the 18cm hob on a cooktop following the heat-up and simmer tests for electric hobs contained in EN 60350-2. The laboratory will conduct three separate tests of that 18 cm hob on each of the four cooktop artefacts, using each of the following:

1) Stainless Steel Pot – 18cm diameter base (right-sized for the hob)
2) Stainless Steel Pot – 15 cm diameter base (20% undersized for the hob); and
3) Aluminium/steel Frying Pan – 18 cm diameter base (assume same water heat-up and simmer, although the actual test on the frying pan deviates from this approach).

In total, participating laboratories will test 4 cooktops (1 gas and 3 electric) x 1 hob on each cooktop x 3 pots/pan on that hob = 12 complete tests. All measurements of temperature and energy consumption should be made using appropriate equipment with calibrations traceable to international standards.

A spreadsheet will be provided by CLASP for the laboratories to enter their test results. Laboratories will also provide temperature and energy consumption profiles for each completed test, along with pictures and videos of the tests.

In addition to the aforementioned 12 tests, for the one gas cooktop, the laboratory will also need to conduct an emissions measurement test to calculate the emissions measured in nanograms per Joule of the following four emissions: carbon dioxide (CO_2), carbon monoxide (CO), nitrogen dioxide (NO_2) and nitrogen monoxide (NO). The procedure for conducting these measurements will be described in the test method provided by CLASP, which will be based around the gas cooktop being placed under an exhaust hood which maintains steady air flow rate and while the stack is sampled continuously for the measurement of these pollutants according to the following standards:

- BS EN 14792:2017 Stationary source emissions. Determination of mass concentration of nitrogen oxides. Standard reference method. Chemiluminescence; and

- PD CEN/TS 17405:2020 Stationary source emissions. Determination of the volume concentration of carbon dioxide. Reference method: infrared spectrometry.

Appropriate equipment for the measurement of these emissions (for example: a Picarro G2401 for CO and CO_2 and a Thermo 42i Chemiluminescence analyser for NO and NO_2) shall be used with calibrations traceable to international standards.

Finally, CLASP requires that the participating laboratories will allow for a technical expert to observe the test as it is conducted in the laboratory, either in person or remotely over Zoom.

Submission

Submit via email

Interested parties should submit their expression of interest by **10 March, 2023** with their quote of **no more than 3 pages** including the information listed below and links to their accreditation certificates on their website.

The files should be named as per the following example:

[CONTRACTOR_NAME] _ EOI YYYY-MM-DD

Expression of Interest

CLASP is asking that interested laboratories prepare and submit an expression of interest and provide:

- An estimate of the cost (in USD) to participate in this RRT, providing a breakdown of the costs associated with the testing described above for the one hob, four artefacts and three pots/pan.
- An indication of when your laboratory would be available to conduct this testing.
- The location of your test laboratory and any relevant accreditation / qualifications / experience for conducting the testing of IEC 60350-2 or similar standards relating to the testing of electric or gas cooking appliances.
- If applicable, any relevant accreditation / qualifications /experience for conducting the testing of EN 14792:2017, PD CEN/TS 17405:202 or other air pollutant measurements.
- What the laboratory intends to do with the cooking appliances after testing if it acts as the end laboratory

Please respond by **10 March, 2023** with your quote of **no more than 3 pages** and links to your accreditation certificates on your website.

These cost estimates will inform the development of a broader project proposal with a high probability of success, and could also result in additional bulk testing of gas and electric cooktops using this draft new test method in the second half of 2023.

Once funding for this project has been approved, CLASP will share the full draft test method with successful applicants who will be invited to submit a formal quote to participate in the RRT.

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CLASP looks forward to reviewing your responses and would like to thank you in advance for your participation in this Request for Expression of Interest. CLASP will notify all respondents who submit proposals when a decision has been made.

CLASP is an equal opportunity employer that celebrates diversity and are committed to creating an inclusive environment for all employees. CLASP's goal is to be a diverse workforce that is representative, at all job levels, of the citizens we serve. CLASP complies with all federal, state and local employment law in the countries we operate and is committed to providing equal opportunity for all employees and applicants without regard to race, color, religion, national origin, sex, age, marital status, sexual orientation, gender identity or expression, pregnancy, disability, political affiliation, personal appearance, family responsibilities, matriculation, genetic information, military or protected veteran status, credit information or any other characteristic protected under federal, state or local law.

Each person is evaluated based on personal skill and merit. CLASP's policy regarding equal employment opportunity applies to all aspects of employment, including recruitment, hiring, job assignments, promotions, working conditions, scheduling, benefits, wage and salary administration, disciplinary action, termination, and social, educational and recreational programs.