

**TECHNICAL SPECIFICATION  
SUPPLY OF FUEL EFFICIENT COOKSTOVES  
FOR UNHCR PERSONS OF CONCERN  
WORLDWIDE**

June 2016



# GENERAL SPECIFICATION

1. **The UNHCR requires that the supplier submit at least three samples of their proposed cookstove(s) to an independent test centre to evaluate stove performance. The test centre will use the ISO International Workshop Agreement (IWA) methodology and Tiers for testing each cookstove** supplier in carrying out these tests. (<http://cleancookstoves.org/technology-and-fuels/testing/centers.html>). The test centre shall produce a test report which shall include the complete set of test results described below and the supplier shall submit all of this information with their proposal, and authorize test centre to submit the result to the buyer as well.
2. Test centres should have demonstrated experience using the protocols required for testing cookstoves against IWA Tiers. Due to limited availability of cookstove testing services, lead times for receiving test results may vary, and applicants are advised to initiate testing as soon as possible during the tender period. Testing centers and staff must be able to demonstrate that they are technology neutral, and that they are able to provide independent, third-party testing. Thus, they should not have any financial stake in any stove or fuel product on the market. Testing centers may provide design recommendations as a service, but cannot have any long-term financial stake in those products.
3. The supplier shall submit details of any product warranty and estimated product lifespan (including basis for estimation). The supplier should also provide any field testing /proof of performance / durability data for the stoves to the test centre and with their tender submission.
4. Testing centers must also have a quality assurance plan for maintaining equipment, calibration, record keeping, and other procedures to ensure high quality, reliable testing.
5. The supplier should clearly specify which type of fuels the cookstove is best suited for and those fuels which should not be used with their cookstove. (See <http://catalog.cleancookstoves.org/glossary#fuel-types> for clarification)
6. Suppliers shall detail all spare parts which can be supplied separately to repair damaged cookstoves. The supplier shall allow for 2% of spare parts in pricing the stove (e.g. for 10,000 stoves, the supplier would include complete spare part sets for 200 stoves). The supplier shall also provide prices of each spare part should additional procurement be required. If a stove does not have spare parts, the supplier shall detail this in their submission.
7. The supplier shall provide details of the manufacturing process and all materials used, including quality assurance standards and any environmental certifications. Full technical specifications for each item shall be included. It is also preferred that the supplier details the recyclability of product components and packaging.

## 8. QUALITY CONTROL THROUGHOUT THE FRAME AGREEMENT:

UNHCR will carry out random and/or systematic quality inspections, including specific selected criteria for laboratory testing and/or visual inspections of products or items selected by UNHCR or by an independent surveyor appointed by UNHCR from samples selected during production, upon departure, loading, unloading, at final destinations or from any storage or distribution location. The cost of the quality control inspections and laboratory tests will be covered by UNHCR. Quality Control (QC) inspections shall be conducted with regard to items' technical specifications and Acceptable Quality Level (AQL) for potential dispute cases regarding the quality of items which shall be delivered to UNHCR, the Organization will keep reference samples for any further required testing.

Therefore suppliers and manufacturers are requested to ensure that the quality of dispatched items shall fully comply with the technical specifications provided and requirements. In cases of quality discrepancies of products, in addition to applicable compensation clauses as may be defined in the respective AQLs, the additional inspection and laboratory costs will be charged to the supplier.

Note also that for all product deliveries by contracted suppliers, the suppliers will be requested to provide their respective in-house quality certificates, attesting to conformity of delivered products with technical specifications.

Sub-Contracting: Suppliers are requested to take careful note of article 4 of the attached General Terms and Conditions (Annex E)

9. The supplier shall also include for training on how to use the stoves at the field location. The submitted price (every 10,000 stoves) shall include for a one-day train-the-trainer course in Nairobi, Kenya for up to 20 individuals in the operation, maintenance and benefits (protection, health and economic) of using the stove. This price shall include for one trainer to perform 2 days of training and shall include 2 days travel (4 days in total), all international travel costs and any other equipment and other expenses required to carry out the training. Should UNHCR decide to change the location of the training to a specific field location in any country, the supplier shall accommodate this request. UNHCR shall cover the difference in costs of international flights should normal prices exceed costs to Nairobi. UNHCR shall also cover costs of all travel within country from the international airport, in addition to providing the facilities, fuel and stoves for the training. The Supplier shall provide proposed training programme with their submission in addition to any documentation on previous trainings delivered.
10. The supplier should submit their technical and financial proposal to UNHCR before **31<sup>st</sup> of December 2016**. The supplier shall allow sufficient time for delivery of the stove sample and testing by the independent centre in making submissions by this date.
11. Specific contractual details will be finalised at a later date in the event of any procurement.
12. UNHCR does not guarantee to enter into a frame agreement with any supplier. Neither does it guarantee to procure a minimum or maximum amount of cookstoves from any supplier. Quantities stipulated within this tender are for pricing purposes only. The supplier should detail the minimum quantity for any individual order.

## TEST PROCEDURES

The following assessments shall be carried out by the test centre :

1. Fuel Efficiency Assessment
2. Emissions Assessment
3. Safety Assessment
4. Usability Assessment
5. Durability Assessment (optional)

The Fuel Efficiency and emissions assessments are based on the Water Boiling Test (high power cold, high power hot and simmer). The Safety Assessment is based on the Biomass Stove Safety Protocol (BSSP) and the Durability test on the Durability protocol. For further details on these tests, protocols and methodologies, please see documents in Annex B and the Global Alliance for Clean Cookstoves for testing methods (<http://cleancookstoves.org/technology-and-fuels/testing/protocols.html>) and the International Workshop Agreement methods and metrics (<http://cleancookstoves.org/technology-and-fuels/standards/iwa-tiers-of-performance.html>)

## INSTRUCTIONS FOR THE TEST CENTRE

1. Test Centres shall carefully study all test protocols and procedures before performing any tests (See Appendix B). The testing must be conducted using protocols that have been mapped to IWA Tiers. For protocols not currently mapped to IWA Tiers, Tiers of Performance must be reviewed by Alliance Partners, evaluated by a technical committee with representation from testing experts, manufacturers, and other stakeholders, and following any established procedures for developing international standards. The acceptability of a protocol for a particular stove and tier designation should be determined by the ability of the test procedure to repeat the performance metric within one-third of the distance between tiers, under conditions that are consistent with the test specification.
2. Each Stove must be fired for 30 minutes a minimum of 2 times before testing is carried out.
3. The stoves shall only be fired with fuels advised by the supplier. The fuel used (type, source, dimensions, moisture content) should be specified in the test report. The test centre shall closely follow guidelines from the Water Boiling Test document regarding fuel quality.
4. Only UNHCR standard pot sizes are to be used in the tests( 5L : 22-24cm internal diameter, and 7L : 25-28cm internal diameter) Only the 7-Litre pot shall be used for the tests, however, the centre shall confirm that the stove is also compatible with the 5L pot.
5. Changing firepower should not involve restarting the stove, dumping out fuel or conducting tasks that cause increased risk of risk of tipping or burning. This should be highlighted in the test report.
6. Given the frequent movement of cookstoves within camps and households, cookstoves should be easily transferable, with minimal risk, damage to the cookstove, and/or discomfort or injury to the person moving them. Grasping and lifting the cookstove should not result in the handles bending, breaking, cracking, slipping, loosening, or malfunctioning in any manner, even with the addition of a water filled 7L pot. Handles should also not pose a burn risk, and must score a minimum of 3 on the biomass safety protocol (<26°C+ambient temperature for metallic handles and <38°C+ambient temperature for

non-metallic handles).

7. Test reports should clearly detail the Tier rating assignment in each category (efficiency, safety, indoor emissions) and also clearly show if stove has passed minimum criteria detailed below. The mean score for sub-tiers may be used in determining overall tier Tier rating is the minimum Sub-tier value within an indicator category.

The centre must complete the IWA summary sheet (within the WBT result Excel Sheet) for all stoves. <http://cleancookstoves.org/technology-and-fuels/testing/centers.html>

8. The centre will assess the ease of use of the stove in comparison to a 3-stone fire on a scale of 1-15 (higher score for easiest use). Stove should not require that solid fuel be chopped by user to very small sizes (less than 15cm in length and 3cm in diameter).
9. Test reports should also include **ALL** test results, fuel information, and the pot used for testing, as reports with inadequate/incorrect information may not pass the technical evaluation.

## MINIMUM CRITERIA

Stoves must meet **ALL** of the following criteria :

1.  $\geq$  Tier 2 for IWA fuel efficiency
2.  $\geq$  Tier 1 for IWA indoor emissions
3.  $\geq$  Tier 3 for Safety
4.  $\geq$  4 score for flames exiting fuel chamber, canister, or pipes on Biomass Stove Safety Protocol (BSSP)
5.  $\geq$  3 score for Tipping on BSSP
6.  $\geq$  3 for handle temperature rating on BSSP
7.  $\geq$  3 score for fuel containment on BSSP
8.  $\geq$  3 score for flames surrounding cookpot on BSSP
9. Cooking energy delivered to the pot  $\geq$ 0.5 kW at high power
10. Firepower can be easily, reliably, and safely changed
11. Minimum to maximum firepower ratio is  $\leq$ 0.5 for batch-fed stoves
12.  $\geq$  1 year warranty on manufacturer defects
13. Stove weight is  $\leq$ 15 kg
14. Supplier must have minimum production capacity of 3,000 units per month

Stoves which do not pass ALL of the above criteria will not be considered for further technical or financial evaluation.

### Stove Categorisation

Stoves will be classified into 3 separate categories based upon their tested efficiency rating as follows :

#### Category 1

All stoves in efficiency Tier 2 will be evaluated technically and financially only against other stoves rated as Tier 2 by the test.

### Category 2

All stoves in efficiency Tier 3 will be evaluated technically and financially only against other stoves rated as Tier 3 by the test.

### Category 3

All stoves in efficiency Tier 4 will be evaluated technically and financially only against other stoves rated as Tier 4 by the test.

### **Technical Scoring**

Once Cookstoves have passed all of the minimum test criteria above, the stoves and suppliers will be further scored on the following criteria :

1. Emissions rating above Tier 1
2. Safety rating above Tier 3
3. Durability rating
4. Cooking Energy capacity (delivered to pot)
5. Ease of use and adaptability to different fuel types
6. Pictorial operation and maintenance guide suitable for illiterate users
7. Manufacturer's production capacity
8. Manufacturer's quality assurance standards and warranty
9. Recyclability of stove components and packaging
10. Stove transportability

### **Technical and Financial Evaluation:**

For the award of this project, UNHCR has established evaluation criteria which govern the selection of offers received. Evaluation is made on a technical and financial basis. The percentage assigned to each component is determined in advance as follows:

The Technical Offer will be evaluated with a score out of 70%.

The Financial Offer will be evaluated with a score out of 30%.

### Technical Offer

The technical offer will be evaluated on the basis of its responsiveness to the criteria set out in this Term of Reference (TOR).

### Financial Offer

The maximum number of points will be allotted to the lowest price offer that is opened and compared among those invited firms. All other price offers will receive points in inverse proportion to the lowest price; e.g.,  $[\text{total Price Component}] \times [\text{USD lowest}] \setminus [\text{USD other}] = \text{points for other supplier's Price Component}$ .