National Residential Heating Task Force
Responses to Questions Submitted During Independent Assessment of Residential Heating Appliances Webinar

Text in black are the questions received by NESCAUM from the June 17, 2025 project webinar. NESCAUM has not edited the questions, and they appear below as originally submitted. The organization that submitted the question is indicated in parentheses. Text in blue are the Task Force responses. The questions are organized by subject area.

Project Workplan

1. *What were the specific adjustments made to the workplan after the 2024 engagement with the industry? (HPBA)*[1]
   Response: All feedback received, and the outcome of that feedback, can be found in the IA Project Test Plan. Many items recommended could not be addressed because those items were not allowable activities under the project grant guidance (https://www.epa.gov/system/files/documents/2023-11/emissions-from-wood-heaters.pdf). The stove prioritization approach was directed by manufacturer feedback. The Task Force agreed to open the conditioning process to manufacturer participation based on the feedback received. Data reporting elements were reconsidered and revised based on industry feedback.

2. *Will specific Task Force decisions be docketed or released for public review? (HPBA)*
   Response: Docketing is a federal process; it is EPA's decision to determine which items from the project they would like to add to the docket or make public in some other manner. NESCAUM provides all documents to EPA as part of the required reporting process. The project anticipates launching a website in 2026 to post testing data as required by the EPA grant. The Task Force will decide about what additional project materials to post on the website, and the feedback from the comments has been provided to them for consideration.

3. *Are the grant documents, under which all this testing is being done, available for review? (AGH)*[2]
   Response: Yes, the grant documents are available from EPA at https://www.epa.gov/system/files/documents/2023-11/emissions-from-wood-heaters.pdf. See also the response to question 2.

4. *Was the Task Force limited to looking at impact of stoves to the exclusion of the impact of users? (AGH)*
   Response: Yes, EPA grant guidance dictated allowable activities under this project. Assessing impacts of user behavior was not within the scope of allowable activities as detailed on page 4 of the grant guidance. (https://www.epa.gov/system/files/documents/2023-11/emissions-from-wood-

[1] HPBA: Hearth, Patio & Barbeque Association
[2] AGH: Alliance for Green Heat

heaters.pdf). The project is limited to lab testing of stoves, per EPA grant guidance, to assess the impact of technology.

5. *Why would this task force be trying to enable cord wood stoves to be used in all parts of the country? Many cities should be encouraged to clamp down on the new installation of cordwood stoves, but the mandate of the Task Force appears to be at odds with that. (AGH)*
   Response: This work is focused on research, not the potential policies or regulations that might result from research. The testing will obtain standardized, independent emissions data so that areas of the country can use that information to inform their control measures.

6. *Who made the decision not to test pellet stoves and rank them? (AGH)*
   Response: The project is testing and ranking both pellet and cordwood stoves in the first phase.

General Stove Testing Questions

7. *As for the conditioning: particularly soapstone can retain mass amounts of moisture in a short period of time. Our owner's manual says that the stove needs to be specifically pre-burned and cured before a full heat fire can be achieved without potentially damaging the stove. If the stove is conditioned, then shipped, the stones will soak up moisture and potentially crack if a full heat IDC run is the next heat it sees.*
   Also on conditioning, if a stove which uses hearth mortar to seal it's firebox components together is burned, then shipped over road, the mortar can become compromised and create intake air which will alter the burn. (Hearthstone)
   Response: The project requires both the conditioning lab and official testing lab to complete an inspection of the stove before testing. NESCAUM will work with these manufacturers during the conditioning process to ensure these appliances do not have issues when testing. The project's chosen mechanism to transport stoves seeks to minimize the impact of shipping on appliances. However, stoves are shipped for sale, moved for installation in a home, and can be resold and moved again. Moving a stove is part of the typical life of an appliance, but the project will make sure that all stoves are transported carefully and inspected thoroughly after transport. If you have any specific recommendations on your stoves, please share them with us.

8. *If the stoves are being 'conditioned' at Hearth Labs, won't they need to be conditioned at ClearStak just before being tested as well? (HPBA)*
   - *Some stoves use pumice bricks*
   - *High mass stoves can reabsorb a good deal of moisture*

   Response: The purpose of the conditioning process is to ensure that the appliances are ready for official testing, working in proper order, and to develop testing instructions for the official test runs. The project follows the spirit of EPA's current NSPS that creates a wall between research and official stove testing, hence the use of two different labs. Also, the IDC protocols do not allow any testing on the stove by the official testing lab. Using the same lab to condition and test the stoves would violate the test protocol. The project will require that testing occur within 60 days of conditioning the stove to address issues with moisture absorption. If there is more than a 60-day lag between the start of official testing and the last day of conditioning, the official lab will run the stove the week before official testing begins.

9. *Reshipping stoves between Hearth Labs and ClearStak? How will stoves be assessed for any changes during shipping once at ClearStak? (HPBA)*
   Response: See response to question 7, stoves are inspected at both labs before testing.

10. *Can manufacturers be present at ClearStak before stoves are tested to assess the units? (HPBA)*
    Response: Manufacturers will be contacted after their appliance arrives at the conditioning lab. At that time, they will be invited to the conditioning lab to see the unit and to witness an IDC test on their unit, provided that they can attend during the lab conditioning testing schedule. To meet project goals, the schedule cannot be adjusted. Due to budget constraints and multiple tests occurring at the same time on different manufacturers' stoves, the project cannot accommodate outside entities witnessing official tests in person. NESCAUM requested additional funding from EPA to provide resources that would allow outside entities to witness testing, but EPA did not provide additional funds to accommodate this request. The project does require videotaping of all official tests, which will be available for the public after completing all QAPP requirements to ensure that a proper determination about the validity of the test run has been completed. Only valid test runs will be posted publicly. The project team is working to identify a mechanism to post videos of valid official test runs.

11. *Can Manufacturers witness the testing? (HPBA)*
    Response: See response to question 10.

12. *As stated by IDC, will there be 3 consecutive days of testing done at ClearStak? Which allow to carry-over the heat on day 2 and 3. (HPBA)*
    Response: Testing will be conducted as allowed by the IDC test protocol. The IDC allows heat to carry over to the next test run, but it is not mandated. The project will seek to test on consecutive days. However, there may be times when consecutive day testing may not be feasible due to a variety of factors including lab temperature requirements, staffing, and test duration.

13. *If the units are being tested to the IDC method, why/how are operating procedures being developed/altered by Hearth Labs? (HPBA)*
    Response: IDC operating instructions do not exist in the owner's manual or other existing materials. Project staff reviewed owner's manuals and found that they do not contain sufficient information to guide an IDC test, therefore the project must develop operational instructions for the official testing lab. The conditioning process provides information on stove operation to direct the instructions for the official test. Manufacturers will be invited to the conditioning lab to witness the test to see how their stoves operate during an IDC test (provided they can observe during lab's conditioning schedule). Manufacturers will be invited to meet with NESCAUM and review the IDC instructions and request changes as allowed by the IDC protocol. The work completed at the conditioning lab provides the opportunity for manufacturers to have input into how the stove operates during official testing within guidelines of the method.

14. *How are electronically assisted/controlled stoves being tested if they do not operate within the three static burn rates as per the standard? (HPBA)*

Response: The IDC does not require three static burn rates. The IDC method allows the automated stove to use its settings and respond as the manufacturer designed it. The IDC does not impose an override of the automatic controls. Please note that an automatically controlled appliance has already been certified under the current NSPS using the IDC test method.

15. *The IDC method isn't necessarily the best way to operate the stoves by consumers. How will test data be explained such that consumers will understand the nature and purpose of the results they are seeing once the list is published? (HPBA)*
    Response: There is no precedent or requirement by EPA to provide such information. It is important to note that current certification test methods are not representative of consumer use and are not representative of in-situ operations based on an HPBA supported report in 2012, yet EPA publishes those data with no such explanation. The data we have indicate that the lab results with IDC are much closer to in-situ operations than any other lab test to date. We recognize that there is no single approach to running an appliance that reflects homeowner operation. Homeowner operation is highly variable from house-to-house due to different heating needs, fueling practices, and homeowner operational practices. The IDC protocol puts all appliances through various modes it is likely to experience in field operations and assesses how the appliance responds to variable conditions. It is a consistent approach across all tested stoves to provide air agencies with a relative comparison of stove performance.

16. *Would it not be possible to run replicate tests per operating instructions as in the Owner's Manuals to determine repeatability given manufacturers operating instructions might actually allow the stoves to burn cleaner? (HPBA)*
    Response: Owner's manuals vary in detail and content. The conditioning process addresses variances in owner's manuals and ensures a level playing field for official assessment. The purpose of the project is to conduct a ranked list based on outcomes of testing, not to assess optimal emissions performance. EPA grant guidance details the objectives for the project as follows (p. 5 of the grant guidance):

    "EPA seeks to achieve these objectives:
    - *Conduct particulate emissions testing and data analysis on wood heaters available at retail stores in the United States;*
    - *Create a ranked listing of appliance performance based on the outcomes of the testing; and*
    - *Provide the emissions hierarchy to state, local, and tribal air agencies to enable them to make informed decisions regarding the change-out program in their jurisdictions."*

17. *What is the impact of having one single lab to do conditioning and official testing ? (SBI)*[3]
    Response: See response to question 8.

18. *Just to confirm, testing will be done in consecutive days ? So no testing on Friday, Monday and Tuesday, for example ? (SBI)*
    Response: See response to question 12.

[3] SBI: Stove Builder International

19. *How will you decide if 3 tests or 7 tests will be performed as stated ? (SBI)*
    Response: The IDC requires three valid test runs, and no additional runs are required unless directed by the test protocol. Additional test runs may be required by the IDC protocol due to the variability in fan performance.

Stove Selection

20. *I don't know if the 150 stoves have been chosen yet, but we would be very interested to be involved if there was an opportunity. (AJ Wells)*
    Response: The project anticipates up to six rounds of purchases. The project has completed purchasing the first set of stoves. At each round of purchasing, the latest models of devices are reviewed. We anticipate purchasing stoves later this year, in 2026 and early 2027. Final decisions on which stoves are purchased are made by the Task Force. Any feedback received for future prioritization efforts will be communicated to the Task Force. It is Task Force policy for NESCAUM to forward all project communications from relevant stakeholders to it for consideration.

21. *How were the units for this program chosen? We are aware that at least one unit purchased is being discontinued. (HPBA)*
    Response: Units were chosen using the prioritization approach detailed in the presentation slides of the June 17, 2025 webinar (available at: https://www.nescaum.org/documents/2025.06.17_IA_Public_Meeting_final_website.pdf). When the project team meets with manufacturers during the conditioning phase, we check serial numbers with the manufacturer to make sure we have current models. If we determine that we did not receive the most recent model, we will work to exchange the stove.

22. *I have heard that you purchased one of our GM80 stoves for this testing, and I have to say that we have built the last one of these stoves to be offered to the market already. We have totally redesigned this stove, and it was certified with the EPA a few months ago. The new stove runs much better in real world installs, and has been modified to be on a 6" flue since we had heard that customers and installers were incorrectly putting 8" to 6" adapters on them, and causing them to run terrible. I'd be happy to switch out the old version you have now with the newer version, if you'd like. (Hearthstone)*
    Response: See response to question 21.

23. *Our top three selling stoves are on our burn stands right now getting fully redesigned so that the new certifications can be in place a year before their predecessors expire since we are seeing a 6-month minimum lead-time once a report is submitted to the EPA for certification. Generally, we have to start to move on improving a stove about 3 years before the cert expires since testing takes so long, and the EPA review process is also abhorrently long. Since AK wont allow certification extensions without testing, we are also forced to put our stoves through the full testing procedure. (Hearthstone)*
    Response: See response to question 21.

24. *Is there a possibility to add stove models to what is being tested, or have they all been chosen? I strongly suggest that you test the two stoves with the most automation on the U.S. market, as I believe they may help the Task Force better understand the potential of automated stoves. If your goal is to rank stoves so that states can decide which stoves will likely perform better in the hands of consumers, it is essential to also test more automated stoves.*

    The manufacturers of more automated stoves have invested a lot of time, energy and money not just to pass the EPA emissions test, but to work better in the hands of consumers. The two models we know of on the US market are the Charnwood Skye E700, and a number of models using the same technology built by Pacific Energy, such as the NEO 1.6 LE2. Many more models, including even more sophisticated ones, are on the market in Europe. And they would have made more inroads in the market, or even been endorsed as better options by jurisdictions, if the European stove industry had not intervened. Just as with common sense initiatives like the recent one from Washington State, industry in Europe can often win in political forums. Ultimately, your work may be put to a similar test at the state level. Ironically, HPBA has become more of an ally of the fossil fuel lobby, as they seek to preserve "consumer choice" and prevent limits on gas appliances. (AGH)
    Response: See response to question 20.

Test Methods

25. *What version/date of the IDC is being used? Is this available to the public yet? (HPBA)*
    Response: We are using the most recent version of the IDC. The pellet stove protocol is already docketed by EPA (https://www.regulations.gov/document/EPA-HQ-OAR-2016-0130-0026). We anticipate that the new IDC Cordwood Stove and TEOM protocols will be docketed by EPA. It is our understanding that EPA will notify stakeholders and provide links when it posts this information onto their docket. Please note that these protocols are copyrighted and registered by NYSERDA and cannot be modified or used for any other purpose than the one stated in the letter NYSERDA provided to EPA when granting permission to publicly docket the methods.

26. *What version of the IDC is Hearth Labs using? (HPBA)*
    Response: Most of the conditioning tests conducted at HearthLab Solutions (HLS) are not complete IDC test runs. Most hours of burning utilize portions of the IDC to determine appropriate procedures for official testing. HLS will conduct at least one full IDC test run using the most current version.

27. *Will ClearStak use the same version, if not which version? (HPBA)*
    Response: Yes, all testing will follow the same IDC protocol.

28. *Will ClearStak use the same version regardless of how long the project lasts? (HPBA)*
    Response: The goal is to use the same method for all official testing. If there are changes to any of the test methods during the project, the NRH Task Force will determine if changes should be implemented in the IA project testing.

29. *Will all stoves have an 'operating process' created by Hearth Labs? (HPBA)*

Response: HearthLab Solutions will complete a draft of IDC testing instructions. A representative from the manufacturer will be contacted to request a review of the draft instructions before finalizing them and sending the appliance for official testing.

30. *If not, they will not all be tested the same way? (HPBA)*
    Response: See the response to question 29.

31. *What are the resulting metrics produced by the testing: PM, heating efficiency (HHV) based on 100% fuel consumption (L4)?, CO, burn times or other relevant measurements. (HPBA)*
    Response: The test protocols drive what metrics are reported from testing. Section 14 of the IDC protocol dictates PM and efficiency reporting metrics that will be reported from the project testing.

32. *Is it a public version, ATM version (IDC-like) or the post-round table updated version? (HPBA)*
    Response: See response to question 25.

33. *We understand the TEOM is being used by Hearth Labs. What version of the operating system is being used? Flow rates, etc.? (HPBA)*
    Response: See response to question 25.

34. *Will ClearStak use a TEOM? (HPBA)*
    Response: Yes.

35. *If so, will it be the same operating system? (HPBA)*
    Response: Both labs follow the same TEOM protocol. However, emissions data from conditioning is not part of the Level 1 QAPP and therefore not reported as official testing results.

36. *Will stoves be tested using TEOM only, or also with ASTM E2515? (HPBA)*
    Response: Testing will use both the TEOM to obtain real-time PM measurements and ASTM E2515 or an equivalent manual filter method to obtain a single run PM measurement. Both measurements will be reported in the project test reports.

37. *If ASTM E2515 is used, will they use the required fiberglass filter or the one they used in EPA research called TX-40 (Teflon coated)? (HPBA)*
    Response: The filter media used during testing is determined by the protocol used in the project.

38. *How is Alt Method 5G different from E2515 ? (SBI)*
    Response: If an alternative method is used, EPA will post the method for public review and comparisons can be made from those materials.

39. *How is method 10 is different from B415.1-10 ? (SBI)*
    Response: EPA Method 10 can be reviewed here: https://www.epa.gov/sites/default/files/2017-08/documents/method_10.pdf. Significant differences include the measurement approach, data points, and QA/QC measures. Method 3A and 10 do not allow substitution of data from non-certification test runs, which CSA B415 allows.

40. *In the testing, will there be filter sampling (E2515-like) along with TEOM ? If so, which filter type will be used for filter sampling (fiberglass, TX40)? (SBI)*
    Response: See response to questions 36 and 37.

Official Testing

41. *What transparency is there for manufacturers regarding your final version of operating instructions? (Pacific Energy)*
    Response: HLS and NESCAUM will request a meeting with the manufacturer to review instructions prior to beginning official testing for the EPA project.

42. *Will manufacturers be able to witness the testing at the certification lab to ensure they operate the appliance in an appropriate manor? (Jotul)*
    Response: See response to question 10.

43. *Stoves currently certified under 28R must meet minimum burn rate requirements. These lower burn rates can achieve clean burns due to the evenly spaced crib load. However, when transitioning to the IDC method, the preset air settings on many appliances are often too low, resulting in significantly higher emissions. Will manufacturers be allowed to adjust the low air settings prior to IDC testing to ensure cleaner emissions profiles? (Jotul)*
    Response: The purpose of this project is to test products available at retail. We cannot test a unit with air settings that have been adjusted as that would not be representative of the stove sold to consumers and would be considered a "k" list change requiring a new certification test. We can only test units that have been certified under the EPA program and are available, as tested, for consumer purchase.

44. *Would it not be possible to run replicate tests per operating instructions as in the Owner's Manuals to determine repeatability given manufacturers operating instructions might actually allow the stoves to burn cleaner? (HPBA)*
    Response: See response to question 16.

Fuel Species

45. *Which fuel species will be used in both labs ? (SBI)*
    Response: The IDC test protocol dictates the fuel species used for emission testing. The protocol requires the use of maple within a specified specific gravity.

46. *What would be the impact on emissions in Fairbanks if maple-tested stoves were used, given that only spruce and paper birch are locally available?*
    Response: This is out of scope for the project.

47. *You say you will use maple but which maple ? Hard or sugar maple is very dense compared to red or silver maple. Will it be Red maple in both labs ? (SBI)*
    Response: See response to question 45.

48. *Which species will be used by Hearth Lab and by ClearStak? (HPBA)*
    Response: See response to question 45.

49. *19-25% is very wet!! In UK our government has legislated to prevent logs wetter than 20% from being sold, but we test with moistures above 12%. The range in the IDC seems set high enough to struggle getting good combustion that isn't using all the available energy to burn off the steam?! Surely wet wood could be legislated out? (AJ Wells)*
    Response: This is the fuel moisture content that has been used in EPA certification testing since 1988. Currently, only Fairbanks, Alaska has a wood moisture requirement. This project is not seeking to modify policy but rather assess appliances based on current U.S. regulations. It should be noted that even with dry fuel regulations in Fairbanks, Alaska, studies of their fuel piles indicate that the average moisture content of wood burned is 36%, per Alaska Task Force representatives.

Firebox Measurements

50. *Will the user's manual be used to measure the firebox volume or you rely on your standard method? (SBI)*
    Response: The IDC test protocol dictates firebox measurement approaches to assure a consistent firebox measurement across all stoves.

51. *So if a manufacturer says not to put fuel between the log retainer and the glass, will you use this space in the volume calculation ? (SBI)*
    Response: See response to question 50.

52. *Who will determine the usable firebox volume? (HPBA)*
    Response: Both the conditioning and official testing labs will make their own measurements per the IDC test protocol. Prior to official testing, project staff will compare calculations between the two labs to confirm agreement.

53. *Can we give our input before testing? (HPBA)*
    Response: Manufacturers will have multiple opportunities during the conditioning process to provide input on appliance operation instructions that will be used for the official testing. See questions 9 and 12 for additional details.

54. *How is the firebox calculation done, because we struggled before to ensure that our instructions not to load wood above the level of the tertiary air holes was respected. If this volume of wood is used it borders on abuse testing as the stove has no hope of performing correctly! I can see why the tests need to be robust, but to build abuse testing into what is considered to be normal operation doesn't really encourage the sort of innovation in design that we believe you are looking for. (AJ Wells)*
    Response: See response to question 50.

Data Availability

55. *Will the raw data be made publicly available, including the full data matrix? If so, and not just a simplified ranking, how does NESCAUM plan to ensure that the data is not perceived as conflicting with our certification results? (Jotul)*

Response: Per EPA's grant guidance, the project must report all data to EPA's Electronic Reporting Tool. The project QAPP specifies timelines for reporting all raw data, test reports, and summary data. EPA will then determine how to release that data to the public. EPA's Grant Guidance also requires the project to make all data available to regulatory agencies. The NRH Task Force will determine what information and when they post information to the public. The project team anticipates developing fact sheets to explain the difference between the data obtained in this project versus certification data.

56. *How will the results of the assessment be made public? (HPBA)*
    Response: See response to question 55.

57. *Will all the EPA certified stoves be tested prior to any release? (HPBA)*
    Response: The project does not have sufficient funds to test all certified stoves. The NRH Task Force will seek funds to test as many appliances as resources allow. EPA's grant guidance mandates that the project report data to EPA after completing individual tests for each appliance.

58. *If a Short List of stove data is released, how many stoves? (HPBA)*
    Response: See response to question 55.

59. *Will the release be a simple ranking of stoves, or will it include test results? (HPBA)*
    Response: See response to question 55.

60. *Will manufacturers have an opportunity to see and comment on test results before the list is made public? (HPBA)*
    Response: EPA grant guidelines mandated a Level 1 QAPP for the project, which is the most stringent level of review and QA/QC measures. In addition to the Level 1 QAPP activities, the project team provides EPA with 60 days to review and comment on the reports before finalizing the data.

61. *Will the Task Force members have access to the results before they are released? (HPBA)*
    Response: See response to question 55.

62. *Will the data be presented to the public through a grading system like 'Consumer Reports,' or will NESCAUM release information that could be perceived as conflicting with our EPA certification data? (HPBA)*
    Response: See response to question 55.

Ranking List

62. *Once the list is published, it is inevitably going to be out of date from stoves being redesigned or replaced by manufacturers with newer models. How will a manufacturer be able to get a stove on the ranking list after the project is complete? (Hearthstone)*
    Response: See response to question 57.

63. *Since not all wood heaters will be purchased as part of this wood stove project, it is possible the cleanest burning and most efficient stove was not part of the review & testing. How will this be accounted for in communications to the public? (Blaze King)*

Response: The project does not have the resources to test all certified appliances, but it is seeking additional funds to test all cordwood stoves. Based on this comment, we will seek NRH Task Force input on how to ensure consumers can delineate between units.

64. *Since your testing is limited to a select group of appliances, how are you denoting that your list is limited and not comprehensive? How will you explain that stoves/heaters not on the list are not indicative of performance? (HPBA)*
Response: Based on HPBA research[4] and comments, the current certifications values are not indicative of field performance and cannot be used for a ranking mechanism. HPBA's commissioned study reported that values based on crib fuel testing do not correlate with performance in homes and "there is no correlation between certification values and real-world emissions….rank orders change." EPA directed the project to develop a rank-ordered list. Based on the HPBA research, the NRH Task Force determined that certification values cannot be used to create a rank ordered list. This project uses alternative lab testing protocols to provide data indicative of an appliance's in-field performance. Like car miles per gallon estimates, we expect different values in-situ, but the data will be more representative of average nationwide performance than the current certification data.

See response to question 63 for a response related to the universe of appliances tested.

65. *Since the majority of the stoves were tuned to Method 28R, won't this impact the ranking when testing those stoves to an IDC test method? (HPBA)*
Response: See response to question 64.

Questions outside the scope of the project

66. *Is there any overlay data with the last 10 years of forest fires? (IHP)[5]*
Response: This analysis is outside the scope of the project workplan.

67. *Change outs were argued to be a mixed bag, but are short of presenter's opinion of success. Why doesn't this point to user operation being a driving factor behind wood stove emissions, and not the appliances themselves? There are several studies which quantify the dramatic impact of poor user operation of wood heaters. (anonymous)*
Response: This is a conclusory statement outside the scope of the project objective to consistently evaluate appliance performance.

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[4] James E. Houck, Ph.D., *"A Comparison of Particulate Emission Rates from the In Home Use of Certified Wood Stove Models with USEPA Certification Emission Values and A Comparison Between In Home Uncertified and Certified Wood Stove Particulate Emissions."*
[5] IHP: Innovative Hearth Products