

Workshop 3 Agenda

Virtual Workshop on adoption of new wood heater technology and integration with other renewables

April 26th & 27th, 2022

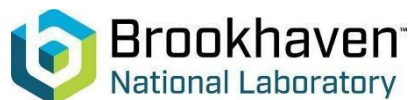
As part of the 5th Wood Heater Design Challenge

Day 1

April 26th, 2022 11:00 – 14:00 New York Time (Eastern Daylight Time)

TIME	TOPIC
11:00 – 11:05	Welcome and goals for the wood heater design challenge and the workshop <i>Mark Shmorhun, DOE</i>
11:05 – 11:10	Organization of the workshop <i>Rebecca Trojanowski, BNL</i>
11:10 – 11:30	Introducing Integrated Duty Cycle Test Methods <i>Lisa Rector, NESCAUM</i>
11:30 – 11:50	Research and development – Manufacturers’ perspective and DOE project updates <i>Manufacturers - DOE grant recipients</i>
11:50 – 12:00	BREAK
12:00-13:00	Breakout Panels
	Session A Adding automation to a wood heater Q&A
	Session B Impact evaluation: Quantifying health, energy & climate impacts for biomass heat deployment
13:00 – 13:15	BREAK
13:15 – 13:30	Closing remarks (summary of breakout panels) <i>Jake Lindberg, BNL</i>
13:30 – 14:00	Optional networking

U.S. DEPARTMENT OF
ENERGY | Office of **ENERGY EFFICIENCY
& RENEWABLE ENERGY**
BIOENERGY TECHNOLOGIES OFFICE



BERKELEY LAB
Bringing Science Solutions to the World



**ALLIANCE
FOR GREEN HEAT**
low carbon, renewable and local

Day 2

April 27th, 2022 11:00 – 14:00 New York Time (Eastern Daylight Time)

TIME	TALK	
11:00 – 11:10	Highlights from day 1 of workshop <i>Vi Rapp, LBL</i>	
11:10 – 11:25	A Review of Field Test Experience Past WHDCs and beyond	
	<i>Tom Butcher, BNL</i>	
11:25 – 11:35	Emerging technologies from abroad, A report from World Sustainable Energy Days 2022 <i>Rebecca Trojanowski, BNL</i>	
11:35 – 11:50	Biomass heat in renewable energy portfolios <i>Speaker to be announced!</i>	
11:50 – 12:00	BREAK	
12:00 – 13:00	Breakout Panels	
	Session C	DOE/National Lab Q&A Tech Slam, 5 th Design Challenge, and Future Events
	Session D	Integrating wood heat with other residential energy systems
13:00 – 13:15	BREAK	
13:15 – 13:30	Closing remarks (summary of breakout panels) <i>Rebecca Trojanowski, BNL</i>	
13:30 – 14:00	Optional networking	



Office of ENERGY EFFICIENCY
& RENEWABLE ENERGY

BIOENERGY TECHNOLOGIES OFFICE



BERKELEY LAB
Bringing Science Solutions to the World



**ALLIANCE
FOR GREEN HEAT**
low carbon, renewable and local

Breakout Sessions:

DAY 1:

Session A	Adding automation to a wood heater Q&A
Description	<p>The effort to begin “automating” wood stoves, usually refers to using sensors and computer chips to adjust airflow after the wood has been loaded by the operator. Automated stoves have the potential to enable the consumer to "load and leave," allowing the stove to maximize efficiency and emissions reductions on its own. Yet, with even with low-cost sensors and extensive expertise in the field of combustion, automating the wood stove has proved challenging for multiple reasons. Making sense of data from sensors and responding to correctly to that data is an engineering challenge, but there is also the issue of whether manufacturers have any significant incentives to automate, if it doesn't help pass the EPA certification testing and if consumers may be reluctant to purchase them. This will primarily be a session for participants to share information, solutions and problems.</p> <p>Automated stoves are an emerging class that is more well-known in Europe and just starting to enter the US market. MF Fire, a Maryland based company launched an automated stove model in 2016. Charnwood, a British manufacturer is entering the US market in 2020 with their Skye E2700. Napoleon is coming out with an affordable automated smart stove in late 2020. The Canadian manufacturer SBI won an award at the 4th Wood Stove Design Challenge for their progress toward an automated stove. In the single burn rate category, the RSF Delta Fusion is an excellent example of a fast burning stove that cannot be adjusted or made to smolder.</p>
Session B	Impact evaluation: Quantifying health, energy & climate impacts for biomass heat deployment
Description	<p>Residential biomass heaters have the potential to be key players in clean energy portfolios of the future, as they leverage renewable and economical energy stocks that may not be useful otherwise. However, the collection and distribution of biomass fuels has inherent impacts (ranging from feedstock harvesting, processing, and transportation), and biomass combustion emits air pollution that contributes to climate change and is harmful to human health. As biomass energy becomes more widespread, it is crucial that both the benefits and impacts be accurately quantified. In this session we will discuss key life cycle analyses to inform responsible adoption of biomass heater technologies at the residential scale. This forum will provide an opportunity for stakeholders to share information on state-of-the-art methods for determining net greenhouse gas emissions over the product lifecycle, evaluating health impacts on surrounding populations, and integrating biomass into renewable energy economies. These considerations depend greatly on the deployment context, so a common toolbox of objective evaluation methods must be established to ensure that biomass heaters provide a net benefit to their local communities and environment.</p>

DAY 2:

<p>Session C</p>	<p align="center">DOE/National Lab Q&A Tech Slam, 5th Design Challenge, and Future Events</p>
<p>Description</p>	<p>This breakout panel will be focused on the planned “Tech Slam” and process for selection of the tams to be granted awards for participation in the 5th Design Challenge. Following an overview presentation there will be an open discussion period. Two “mock” Tech Slam presentations and reviews will be conducted.</p>
<p>Session D</p>	<p align="center">Integrating wood heat with other residential energy systems</p>
<p>Description</p>	<p>In order to combat climate change CO₂ emissions from the heating sector must be reduced. In order to make this change green sustainable heating options must be adopted at a large scale. These options include low-carbon heating options such as electrical heating, heat pumps, and biomass combustion. While there has been much debate as to the extent to which each of these heating options is sustainable, relatively less attention has been paid to combining these types of heating systems together to realize a sustainable and effective low-carbon heating solution. This forum will provide an opportunity for the community to discuss how wood heaters can be integrated into an existing home heat and power system and how wood heating fits into the energy system of a low-carbon home in the future. Good examples of wood as a primary and secondary heat sources for homes and successes integrating renewable wood heat and renewable electricity will be discussed and barriers to entry into the wood heater market that limit the adoption of wood heaters into the residential heating sector in the United States.</p>