

On behalf of Central Boiler, Inc. (Central Boiler), the leading manufacturer of outdoor wood-fired hydronic heaters in the US, Trinity Consultants Inc. (Trinity) submits following comments to the New York State Climate Action Council (Council) in regard to the Council's Draft Scoping Plan published on December 30, 2021 [<https://climate.ny.gov/Our-Climate-Act/Draft-Scoping-Plan>].

In particular, Central Boiler is commenting on the following statement excerpted from page 68, Section - Housing/Residential Built Environment.

*EPA estimates the PM2.5 emissions from residential wood heating in New York State, representing 2% of homes, is greater than that from the power generation sector and the entire and transportation sectors combined. Adverse health effects associated with exposure to wood smoke are consistent with those identified for PM2.5 (a major component of wood smoke) including exacerbation of cardiovascular symptoms (e.g., chest pain, heart rhythm changes, heart attack, stroke), and respiratory symptoms (e.g., asthma). The elderly, people with heart and lung diseases, people of low economic status, and children are particularly vulnerable to the effects of fine particle exposures in wood smoke. Wood smoke is found in particularly rural areas of the State, and some wintertime smoke impacts are significant.<sup>140</sup> [emphasis added]*

The source of data supporting this comment is footnote 140 of the Draft Scoping Plan [Allen, George and Lisa Rector. "Characterization of Residential Woodsmoke PM2.5 in the Adirondacks of New York." Aerosol and Air Quality Research 20 (2020): 2419-2432]. That study referenced the 2014 National Emissions Inventory Report published by the EPA. Since that time, the EPA has published the 2017 National Emissions Inventory (NEI) Data which was updated in January 2021 [<https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data>, January 2021 version]. As described in that report, residential wood combustion includes a broad range of appliances including fireplaces, furnaces, heaters and woodstoves. The following are a comprehensive list of appliances considered under "Fuel Combustion – Residential – Wood" sector.

- ▶ Fireplace: general
- ▶ Furnace: Indoor, cordwood-fired, non-EPA certified
- ▶ Furnace: Indoor, pellet-fired, general
- ▶ Hydronic heater: indoor
- ▶ Hydronic heater: outdoor
- ▶ Hydronic heater: pellet-fired
- ▶ Outdoor wood burning device (fire-pits, chimeneas, etc.)
- ▶ Woodstove: fireplace inserts; EPA certified; catalytic
- ▶ Woodstove: fireplace inserts; EPA certified; non-catalytic
- ▶ Woodstove: fireplace inserts; non-EPA certified
- ▶ Woodstove: freestanding, EPA certified, catalytic
- ▶ Woodstove: freestanding, EPA certified, non-catalytic
- ▶ Woodstove: freestanding, non-EPA certified
- ▶ Woodstove: pellet-fired, general (freestanding or FP insert)

The Draft Scoping Plan, therefore, makes a broad generalization about the impacts of PM2.5 emissions from residential wood heating without qualifying the generalization to make it clear that the overwhelming percentage of PM2.5 emissions relating to residential wood heating are from combustion in non-EPA

certified appliances and other uncontrolled wood burning compared to exceedingly minor contributors such as EPA-certified wood-fired hydronic outdoor heaters. Based on EPA's 2017 NEI data, wood-fired hydronic outdoor heaters contributed less than 3% of total PM<sub>2.5</sub> emissions in the state of New York, and are considerably less than the PM<sub>2.5</sub> emissions from the power and transportation sector combined.

It should be noted that the 2014 data used to support the Allen *et. al.* report was published prior to the phase in period for two federal New Source Performance Standards (NSPS) emission standards published by the EPA for residential wood heaters. The two standards are Title 40 of the Code of Federal Regulations Part 60, Subpart AAA Standards of Performance for New Residential Wood Heaters, and Subpart QQQQ, Standards of Performance for New Residential Hydronic Heaters and Forced-Air Furnaces. Through these two NSPS, the EPA regulates particulate emissions from residential wood heaters and hydronic heaters. Both of these regulations phased in emission standards starting in 2015 and more stringent emission limits starting in 2020. As noted above, residential wood heaters are generally regulated by NSPS Subpart AAA. The EPA adopted a new NSPS Subpart QQQQ in May 2015 requiring particulate emissions from all new residential hydronic heaters to be reduced by up to 90% as compared with older units [<https://www.epa.gov/burnwise/choosing-right-hydronic-heater#qualified>]. And, the 2020 NSPS emissions requirement resulted in a further reduction in particulate emissions, bringing the combined emissions reduction under the 2015 and 2020 requirements to 98%, as compared with older units. In the preamble of NSPS Subpart QQQQ final rule, EPA states that the "*Emission reductions associated with the requirements of this rule will generate substantial health benefits by reducing emissions of PM<sub>2.5</sub>, HAPs, as well as criteria pollutants and their precursors, including CO and VOC. VOC are precursors to PM<sub>2.5</sub> and ozone.*" [<https://www.govinfo.gov/content/pkg/FR-2015-03-16/pdf/2015-03733.pdf>; 80 FR 13694]

Thus, while the PM<sub>2.5</sub> emissions from all wood-fired hydronic outdoor heaters constitute only a fraction (less than 3%) of total PM emissions in New York State (2017 NEI data, updated January 2021), this data does not reflect the stringent PM emission standards implemented for such heaters under the NSPS in 2015 and 2020. Furthermore, as the old residential hydronic wood heaters currently in use reach the end of their useful life and are phased out, they will be replaced by new EPA-certified hydronic heaters that comply with the most stringent (2020) PM standards, thereby significantly further reducing the risk from PM emissions. In fact, Central Boiler reports that as many as two-thirds of its recent sales of hydronic heaters in New York were to consumers that were replacing older units with NSPS-compliant units.

In summary, Central Boiler believes that the comment in the Draft Scoping Plan comparing "residential wood heating" in New York State to the power generation and transportation sector to be too general of a comparison based on the numerous types of combustion sources included in the EPA-published NEI emissions data and the substantial difference in the level of PM<sub>2.5</sub> emissions from hydronic wood heaters compared to the total residential wood combustion PM<sub>2.5</sub> emissions.

Central Boiler requests that the Climate Action Council clarifies the statement in the Draft Scoping Plan regarding PM<sub>2.5</sub> emissions from residential wood heating to differentiate the emissions and health risks from different types of residential wood use. In particular, those uses, such as hydronic wood heaters, that are regulated by the New York State and federal NSPS particulate emission standards, should not be lumped together with wood combustion in unregulated appliances or open burning, such as fire pits. Furthermore, Central Boiler requests that the Draft Scoping Plan accurately represent the risk of PM<sub>2.5</sub> emissions from the general category of residential wood burning compared to PM<sub>2.5</sub> emissions in EPA-certified residential hydronic heaters, which have particulate emissions as much as 98% lower than older non-regulated units. Central Boiler recommends that the Council consider existing air emission control regulations that have been adopted to limit PM emissions from hydronic wood heaters and other similar sources when making recommendations for the Housing/Residential Built Environment in the final version of the CLCPA Scoping Plan.