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Suggestions for studying stove pollution

Honorable Commissioners and Staff,

Thank you for this opportunity to comment. As specialists in affordable housing, we have some suggestions for how to best deploy research funds in affordable housing.

- 1. In order to help the largest number of children recover from asthma with these funds, I suggest recruiting non-randomly, only from households with asthmatic children.
- 2. In order to track their before/after health improvement, study all these recruited households for 6-12 months, and then replace all of their gas stoves and track their health for another 6-12 months. This is a scientifically robust approach, and immediately improves the health of all children participating, rather than leaving a control population of low-income asthmatic children suffering from known attacks on their health for another year.
- 3. I suggest targeting deed restricted affordable housing, which undergoes regular "deep rehabs" every 15-25 years, to leverage matching funds for range replacement. Most affordable housing developers have 1000-15,000 residences in their portfolios, and can immediately identify which projects could provide matching rehab funds within the research period. Absent these matching funds, the ~\$1700/residence retrofit cost (\$1200/range + \$500/240V new circuit) will equal the cost of research-grade monitoring equipment, effectively cutting in half the number of children that can be served.
- 4. I additionally suggest targeting regulated affordable housing because they are required to maintain deep knowledge of every household (e.g. # of children, their ages, parents' occupations), which facilitates higher quality research.
- 5. I suggest targeting the worst air quality districts with competitive scoring, rather than making it a threshold--asthmatic children live everywhere in California, so they should be eligible for help, but the worst afflicted should be targeted.

Thank you for funding this incredibly important research. My goal in making these suggestions is to expand the number of households that can be served, as well as the number of children that can be studied to ensure the \$1M can provide a robust research group size. Because we know that roughly 30% of low-income children are asthmatic, that means that an average 60 unit low-income "Large Family" development with 120-150 children will likely have 40-50 asthmatic children. Only 2-3 apartment complexes would be needed to have 100 children under study, which is feasible for a research team to identify and serve.

Sincerely, Sean Armstrong Managing Principal Redwood Energy 707-826-1450 redwoodenergy.net