

**Statement to the Environmental and Academic Committee of the
City of Philadelphia's PES Refinery Advisory Group**



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Thank you for the opportunity to speak. My name is Sarah Davidson—I am an earth scientist and live in Graduate Hospital. I am here today as a resident and to represent the Philly Pod of 500 Women Scientists, a grassroots volunteer organization with the mission to serve society by making science open, inclusive, and accessible.

As you evaluate options for the future of the Philadelphia Energy Solutions refinery site, we urge this Advisory Group to see its role as part of a larger conversation about the energy and economic transition the City must undertake to address climate change. It should integrate the City's plans to reduce emissions and Mayor Kenney's commitment to the Paris Agreement, which requires that the City be at zero net emissions by roughly 2050 or sooner, about 30 years. The City's 2018 Clean Energy Vision recognizes the critical role of the PES refinery site in getting to zero emissions: the report states that "The City, residents, and other stakeholders will... need to work together to determine the future of the South Philadelphia oil refinery currently operated by Philadelphia Energy Solutions. The refinery is the single-largest source of particulate emissions in the city and alone accounts for nearly 16 percent of Philadelphia's carbon footprint, not including the fossil fuel products exported off-site."

This Advisory Group is now starting the conversation envisioned in the City's report. We have the following recommendations:

- As implied above, use this as an opportunity to plan for the transition of the PES site to one not dependent on fossil fuels.
- Financial assessments should consider the impact of various climate policies on the City and potential buyers of the site, including carbon pricing bills that have been introduced in Congress or potential future regulations.
- Consult with the schools and programs that are training our local workforce, and coordinate so that they are providing residents with the skills needed to support the future long-term use of this site.
- Consult with scientists to understand the climate and health impacts of alternative options for use of the site. 500 Women Scientists represents over 20,000 women scientists globally, and the Philly Pod has 170 members. We would be happy to support the Advisory Group's work by connecting you with relevant experts and information or requesting input from our membership.

My 4-year-old son will be 86 in the year 2100, the year many climate projections end. He and his generation are depending on us to start this transition. Voting and public polling records indicate that the vast majority of Philadelphia families support reducing emissions and development of jobs and infrastructure that don't rely on fossil fuels. We thank the Advisory Group for their important work to sustain the City's communities and economy now and into the future.



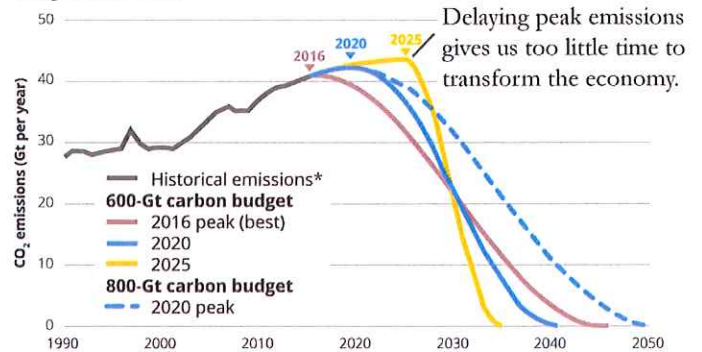
URGENT: SUPPORT STRONG, EQUITABLE, AND DURABLE POLICY TO MITIGATE AND ADAPT TO CLIMATE CHANGE

Climate change is already having negative impacts on communities throughout the United States¹. We are running out of time to decarbonize the US and global economy to limit global warming and the

risks of catastrophic climate change. Current commitments to eliminate emissions must become significantly more ambitious.^{2,3,4,5} In the past, great undertakings such as this have harmed marginalized communities and exacerbated inequalities. In our current system, minority and low-income communities have greater exposure to pollution leading to poorer health and economic outcomes.^{6,7,8} These same communities have less capacity to adapt to climate change.¹

We at 500 Women Scientists Philly Pod urge decisive and quick action to justly transition away from fossil fuels and reach net zero emissions by 2050 or sooner. Proposed climate solutions must be both *equitable* — with provisions to avoid adverse impacts on vulnerable communities — and *durable*, in that they move us toward zero emissions and grow our economy. We need policies that drive emissions reductions and provide support for communities reliant on the fossil fuel industry, infrastructure updates to enable clean energy, transportation, industry and land use, and opportunities for all to have a voice in and benefit from this transition. Working with local coalitions already involved in these efforts is necessary to pass policies and sustain public support in the limited time we have.

Carbon crunch: As of 2016, there was a mean budget of around 600 gigatonnes (Gt) of carbon dioxide left to emit before the planet warms dangerously, by more than 1.5–2°C. Stretching the budget to 800 Gt buys more years, but at a greater risk of exceeding the temperature limit.



Data from The Global Carbon Project.¹³

Cosponsor HR 763: The Energy Innovation and Carbon Dividend Act.

The projected emissions reductions from HR 763 are in line with what the best available science says is needed to limit global temperature rise to 1.5° Celsius. HR 763 creates jobs and helps protect low- and middle-income Americans from the financial burden of the transition. This bill has both Democrat and Republican co-sponsors, making it viable in a divided Congress. This bill on its own does not solve the problem but sends a clear and crucial message that the US is decarbonizing its economy.

Our recommendations:

- * Co-sponsor HR 763 (House) or introduce a companion bill (Senate).
- * Support this and other nationwide mitigation policies with the benefits outlined above (all legislators).
- * State, regional and local officials should plan how their communities will take advantage of a national climate mitigation plan to enable a fair, fast and prosperous transition to renewable energy.

Create and support local and regional solutions with a clear path to an equitable transition.

Cities and local communities are beginning to build coalitions to map out a path to a cleaner future.^{9,10,11,12} These plans should detail how to reach net zero emissions locally, including all sources (buildings, transportation, water, trash, food and land use, manufacturing, etc.); maximize affordability, equity, and economic benefits; identify roadblocks (e.g. legal, infrastructural, financial) and specific steps to solve them; and include meaningful public input and cooperation between agencies, businesses, universities, advocates, and other stakeholders.

Our recommendations:

- * Create detailed emissions reduction plans that maximize affordability and move us towards 100% renewable energy generation before 2050 (local, regional, state).
- * Support local and state efforts with policies, information and tools that enable these plans and guidance on how to achieve sustainable practices and zero-emissions energy (Federal).

References

1. USGCRP (2018) Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 1515 pp.
<https://doi.org/10.7930/NCA4.2018>
2. Climate Action Tracker (2016) 10 steps: the ten most important short-term steps to limit warming to 1.5°C. Climate Action Tracker Report, 44 p.
<http://climateanalytics.org/publications/2016/the-ten-most-important-short-term-steps-to-limit-warming-to-1-5c.html>
3. Fawcett AA, Iyer GC, Clarke LE, Edmonds JA, Hultman NE, McJeon HC, Rogelj J, Schuler R, Alsalam J, Asrar GR, Creason J, Jeong M, McFarland J, Mundra A, Shi W (2015) Can Paris pledges avert severe climate change? *Science* 350(6265): 1168–1169. <https://doi.org/10.1126/science.aad5761>
4. Greenblatt JB, Wei M (2016) Assessment of the climate commitments and additional mitigation policies of the United States. *Nature Climate Change* 6: p. 1090–1093. <https://doi.org/10.1038/NCLIMATE3125>
5. Luderer G, Bertram C, Calvin K, De Cian E, Kriegler E (2016) Implications of weak near-term climate policies on long-term mitigation pathways. *Climatic Change* 136: p. 127–140.
<https://doi.org/10.1007/s10584-013-0899-9>
6. Christopher W. Tessum, Joshua S. Apte, Andrew L. Goodkind, Nicholas Z. Muller, Kimberley A. Mullins, David A. Paoella, Stephen Polasky, Nathaniel P. Springer, Sumil K. Thakrar, Julian D. Marshall, Jason D. Hill (2019) Inequity in consumption of goods and services adds to racial–ethnic disparities in air pollution exposure. *PNAS*. <https://doi.org/10.1073/pnas.1818859116>
7. Banzhaf, Spencer, Lala Ma, and Christopher Timmins. 2019. "Environmental Justice: The Economics of Race, Place, and Pollution." *Journal of Economic Perspectives*, 33 (1): 185-208.
<https://www.aeaweb.org/articles?id=10.1257/jep.33.1.185>
8. Tony G. Reames, Mercedes A. Bravo, People, place and pollution: Investigating relationships between air quality perceptions, health concerns, exposure, and individual- and area-level characteristics, *Environment International*, Volume 122, 2019, Pages 244-255, ISSN 0160-4120.
<https://doi.org/10.1016/j.envint.2018.11.013>
9. Powering Our Future: A Clean Energy Vision for Philadelphia (2018)
<https://www.phila.gov/documents/powering-our-future-a-clean-energy-vision-for-philadelphia/>
10. Carbon Free Boston: Summary Report (2019)
<https://www.greenribboncommission.org/document/executive-summary-carbon-free-boston/>
11. Draft of Manchester Zero Carbon Framework 2020-2038 (2019)
<http://www.manchesterclimate.com/sites/default/files/Draft%20Manchester%20Zero%20Carbon%20Framework%202020-38.pdf>
12. Zero Carbon London: A 1.5°C Compatible Plan (2018)
https://www.london.gov.uk/sites/default/files/1.5c_compatible_plan.pdf
13. Figueres C, Schnellhuber HJ, Whiteman G, Rockström J, Hobley A, Rahmstorf S (2017) Three years to safeguard our climate. *Nature* 546: p. 593–595. <https://doi.org/10.1038/546593a>