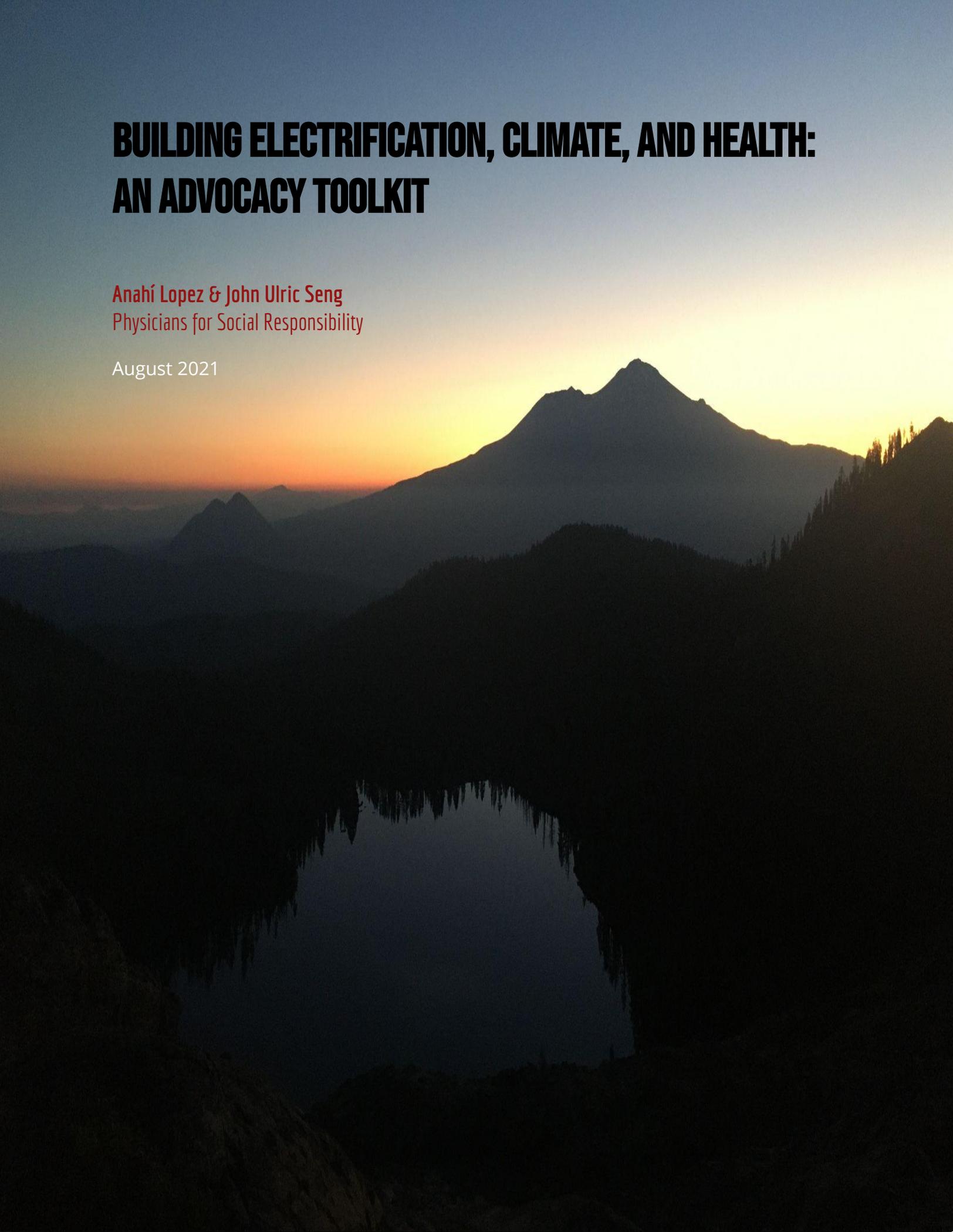


BUILDING ELECTRIFICATION, CLIMATE, AND HEALTH: AN ADVOCACY TOOLKIT

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Physicians for Social Responsibility

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PART II: RECOMMENDED RESOURCES ON BUILDING ELECTRIFICATION, HEALTH, AND CLIMATE

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This section contains thumbnail descriptions of and links to resources that apply to building electrification, health, and equity. All were recommended by PSR chapters; some were created by PSR chapters, some by external authors.

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ENVIRONMENTAL JUSTICE AND EQUITY

- [“White Supremacy Culture,”](#) eight-page article by Tema Okun
 - The term “White supremacy” certainly describes the ideals and actions of hate groups that commit and promote overt acts of violence towards people of Color and Indigenous people, but White supremacy can also show up in subtler ways that need attention.
 - More broadly, “White supremacy” describes a set of harmful and pervasive norms that come out of colonialism and White dominance.
 - Organizations like PSR that aspire to be good-faith allies with BIPOC communities need to understand and grow out of White supremacy.
- [“Climate equity and community engagement in building electrification,”](#) toolkit created by Emerald Cities Collaborative and Poder San Francisco.
 - Intended to help city officials and community-led organizations develop community engagement plans for equitable building electrification.
- [“Health Impacts of Gas in Homes: Focus on Children and Health Equity,”](#) webinar by PSR Colorado
 - Hour-long webinar on health impacts of gas stoves, with particular attention to children and equity.
- [“Health Equity and the Portland Clean Energy Initiative Report,”](#) by Oregon PSR
 - Report on racial and economic health disparities in Portland and how the Portland Clean Energy Initiative will benefit the health of Portland’s low-income residents and people of color.
- [“A Framework for Equitable Building Electrification,”](#) long-form report by the Greenlining Institute.
 - This report addresses the opportunities and challenges that electrification presents for low-income communities.
 - Offers a five-step framework for how the current goals of building electrification can be aligned with producing healthy homes, creating high quality, local jobs that cannot be outsourced, and establishing stronger connections to climate change policies and goals.
- [“Disproportionate impacts and systemic racism in environmental policy,”](#) long-form article by Charles Lee
 - This 19-page article discusses the disproportionate impacts linked to systemic racism and the roots of inequitable distribution of environmental burdens and benefits.

ENVIRONMENTAL JUSTICE AND EQUITY (CONT'D)

- [“17 Principles of Environmental Justice,”](#)
 - Developed at the First National People of Color Environmental Leadership Summit in 1991.
 - A foundational text for environmental justice work.
- [“Electrification of Buildings: Climate, Health, Justice,”](#) from San Francisco Bay Area PSR
 - 80 minute webinar with presenters from San Francisco Bay Area PSR, PODER, Menlo Spark, and RMI
 - Effectively emphasizes urgency of building electrification
 - Thoroughly covers equity issues
 - Much of content is San Francisco Bay Area-specific, but the underlying issues are universally applicable
- [“Opposition to Eversource substation,”](#) written testimony submitted by Brita Lundberg, M.D., Chair of the Board, Greater Boston PSR
 - Addressed to Secretary Kathleen A. Theoharides, Chair, Energy Facilities Siting Board, Massachusetts Executive Office of Energy and Environmental Affairs
 - In support of East Boston residents and organizations in their effort to bring attention to serious health concerns regarding the proposed expansion of a high voltage electrical substation by a utility company called Eversource.
 - Proposed expansion was to be sited adjacent to a playground in an overburdened community.
- [“An extremely comprehensive list of resources”](#) by Oregon PSR
 - For those who wish to pursue further reading. Some of the resources in this Toolkit are included and described in the list.

WEBINARS

- [“Electrification of Buildings: Climate, Health, Justice,”](#) from San Francisco Bay Area PSR
 - 80-minute webinar with presenters from San Francisco Bay Area PSR, PODER, Menlo Spark, and RMI
 - Effectively emphasizes urgency of building electrification
 - Thoroughly covers equity issues
 - Much of content is San Francisco Bay Area-specific, but the underlying issues are universally applicable
- [“Electrification for Healthier Homes and Communities,”](#) PowerPoint created and presented by Andee Krasner, Program Manager, Climate and Health Greater Boston PSR.
 - Exposes natural gas as a “false promise”
 - Links buildings to pollution-related premature deaths
 - Describes health costs of gas appliance use
 - Many valuable infographics on benefits of electrification
 - Explains heat pumps
 - Provides Massachusetts-specific information on electrification costs and rebate programs
 - There is also a New Jersey-specific version, [“Health Effects of ‘Natural’ Gas Pollution from Buildings and Gas Stoves,”](#) included here to demonstrate that the slides can be adapted to fit regional needs
- [“Gas in your home and its health impacts,”](#) from PSR Colorado
 - [English version](#)
 - [Spanish version](#), “El gas en su hogar y el impacto en su salud”

WEBINARS (CONT'D)

- [“Health Impacts of Gas in Homes: Focus on Children and Health Equity,”](#) by PSR Colorado
 - Hour-long webinar covering health impacts of gas stoves, with particular attention to children and equity
- [“Outside In and Inside Out: What’s in the air we breathe?”](#) from PSR Pennsylvania
 - Powerpoint presented by Peter DeCarlo, PhD, associate professor of Environmental Health and Engineering at Johns Hopkins
 - Very detailed, largely scientific presentation on air quality, climate, and health (gas-related and otherwise)
- [“Steps To A Clean Energy Economy and Better Health,”](#) from PSR Pennsylvania
 - Powerpoint presented by Dr. Walter Tsou, Board Member, PSR Pennsylvania
 - Dual focus on transition to a clean energy economy and associated public health benefits
 - Broad subject matter, suitable for a general audience, including but not limited to gas
 - Includes opportunities for individual and collective action

SHORT EXPLAINER VIDEOS

- [“Making the Switch to Healthy Electric Homes,”](#) by PSR Colorado
 - Professionally produced 3-minute video
 - Multiple physicians interviewed
 - Explains short-term fixes (ventilation) as well as electrification
- [“Proteja su hogar de la contaminación por la quema de gas,”](#) by PSR Colorado
 - Spanish for “Protect your home from gas-burning pollution”
 - Professionally produced 3-minute video
 - Multiple physicians interviewed
 - Explains short-term fixes (ventilation) as well as electrification
- [“Why We Need Healthy Electric Homes,”](#) by PSR Colorado
 - A variation on the theme of the two videos listed above
- [“Gas-free homes: a win for our climate, health, and safety,”](#) short animation by the Sierra Club
 - Simple and effective minute-long animated explanation of health and climate aspects of electrification
- [“How Does a Heat Pump Work?”](#) by Chaffee Air, HVAC contractors
 - Scientific explanation of heat pumps for a detail-oriented audience
- [“Professional Chefs Love Cooking with Induction,”](#) by Reviewed.com
 - Several chefs express their enthusiasm for induction stoves
 - Explains additional benefits over gas
- [“The Health Benefits of Heat Pumps,”](#) by PSR Pennsylvania
 - Animated short explaining health and climate benefits of heat pumps

SHORT EXPLAINER VIDEOS (CONT'D)

VIDEO INTERVIEWS

- [“Sustainable, Healthy Home Appliances,”](#) via PSR Colorado
 - Local TV news segment with a Colorado resident providing a tour of an electrified home
 - Includes demonstrations of an induction stove and a heat pump
- [“Healthy Appliances Part 2”](#) via PSR Colorado
 - Local TV interview with Colorado pediatrician Jessica Miller, MD
 - Discussion is focused on pediatric health impacts of gas in homes

TV ADS

- [“Get Off Gas and Go Electric4Health,”](#) via PSR Colorado
 - TV ad co-produced by PSR Colorado highlighting the health benefits of electrification (and the hazards of gas).
 - This ad can be obtained from PSR Colorado and easily adapted to be shown in your community.

GRAPHICS

- [“Hazards of gas in homes,”](#) (English) by PSR Colorado
- [“Hazards of gas in homes,”](#) (Spanish) by PSR Colorado
- [“How Heat Pumps Work,”](#) by PSR Pennsylvania
- [“How gas in our homes affects our air and health,”](#) by PSR Pennsylvania
 - Expanded version of “Hazards of gas in homes” from PSR Colorado
- [“5 ways to protect your family if you have a gas stove,”](#) by Mothers Out Front

Story maps

- [“Effects of Residential Gas Appliances on Indoor and Outdoor Air Quality and Public Health in California,”](#) by UCLA School of Public Health
 - Interactive, highly detailed exploration of gas and health in California
 - Chapters could use ArcGIS to create similar reports for their own states
 - Part of a larger report from UCLA School of Public Health

TESTIMONY SAMPLES

- [“Re: Commissioner Workshop - 2022 Energy Code Pre-Rulemaking,”](#) written testimony submitted by Greater Boston PSR and San Francisco Bay Area PSR
 - Addressed to the California Energy Commission (CEC)
 - Expresses support for policies that reduce household gas stove pollution and for adopting indoor air guidelines that are protective of sensitive populations, including children and children with asthma.
- [“Re: Boston BERDO \(Building Energy Reporting and Disclosure Ordinance\),”](#) written testimony submitted by Greater Boston PSR
 - Greater Boston PSR testifies in favor of an ordinance that sets out five-year benchmarks for cutting carbon emissions from buildings of at least 20,000 square feet and residential buildings with 15 or more units.
- [“Opposition to Eversource substation,”](#) written testimony submitted by Brita Lundberg, M.D., Chair of the Board, Greater Boston PSR
 - Addressed to Secretary Kathleen A. Theoharides, Chair, Energy Facilities Siting Board, Massachusetts Executive Office of Energy and Environmental Affairs
 - In support of East Boston residents and organizations in their effort to bring attention to serious health concerns regarding the proposed expansion of a high voltage electrical substation by a utility company called Eversource.
 - Proposed expansion was to be sited adjacent to a playground in an overburdened community.
- [“Support for Oregon HB 2021-A -A46,”](#) written testimony submitted by Oregon PSR
 - Written testimony by the director of the chapter’s Healthy Climate Program.
 - In support of a bill to ensure Tribal consultation before building clean energy and energy storage projects, and to create significant co-benefits to public health.
- [“Support for Oregon HB 2475. Energy Affordability,”](#) written testimony submitted by Oregon PSR
 - Addressed to Chair Marsh, Vice-Chair Helm, Vice-Chair Brock Smith, and Committee members of the Oregon State House Committee on Energy and Environment.
 - In support of a bill to provide relief to Oregon’s most energy- burdened families, especially BIPOC Oregonians and those in rural counties where energy burden rates are the highest.

TESTIMONY SAMPLES (CONT'D)

- [“Support for Oregon HB 2842, Healthy Homes Act,”](#) written testimony submitted by Oregon PSR
 - Addressed to Chair Fahey, Vic-Chair Campos, Vice-Chair Morgan, and committee members of the Oregon State House Committee on Housing.
 - In support of a bill to serve those who cannot afford repairs. Would help fill gaps in existing programs.
- [“Letter to Mass BBRS regarding Net Zero Stretch Code,”](#) written testimony submitted by Greater Boston PSR
 - Addressed to John Couture, Chair, and Kerry Dietz, Vice-Chair, Massachusetts Board of Building Regulation and Standards (BBRS)
 - In support of a Net Zero stretch code that would create a path to significantly reduce the state’s carbon emissions and make communities healthier and safer.
- [“Walter Tsou testimony on RGGI,”](#) verbal testimony by Dr. Walter Tsou, Executive Director, PSR Pennsylvania
 - Transcript of live testimony in support of Pennsylvania joining RGGI, which has a ten-year record of success in both creating incentives to reduce carbon emissions and funding the transition.

COMMUNICATIONS WITH INDUSTRY

- [“Letter to Eversource Gas,”](#) by Greater Boston PSR
 - Letter from a coalition including Greater Boston PSR requesting that Eversource Gas pivot to non-combustible heating and cease their promotion of false climate solutions.

LONG-FORM REPORTS

- [“Health Effects from Gas Stove Pollution,”](#) by PSR National, RMI, Mothers Out Front, and Sierra Club
- [“Opposition to Eversource substation,”](#) written testimony submitted by Brita Lundberg, M.D., Chair of the Board, Greater Boston PSR
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SHORTER GUIDES AND HANDOUTS

- **[“HEAT PUMPS,”](#) BY GREATER BOSTON PSR**
 - A page of Greater Boston PSR’s website that explores costs, benefits, and mechanisms of heat pumps.
 - Provides information on the finances of heat pumps that is Massachusetts-specific, but could serve as a great template for other chapters.
- **[“INDUCTION STOVES,”](#) BY GREATER BOSTON PSR**
 - A very general webpage on benefits and mechanisms of induction stoves
- **[“AIRBORNE PARTICULATE MATTER AND PUBLIC HEALTH,”](#) BY OREGON PSR**
 - Short, straightforward guide to health impacts of particulate air pollution

POLICY TEXTS

Electrification-related bills supported by our chapters during 2021 state legislative sessions:

- Oregon PSR
 - [2021 Legislative Wrap-Up](#)
 - Oregon PSR's 2021 State Legislative Agenda results. Includes bills the chapter supported, as well as bills they opposed that did not pass.
 - Passed: [HB 2475, Energy Affordability](#) (summary from State Legislature website):
 - *"Authorizes Public Utility Commission to consider differential energy burden and other inequities of affordability in rates. Authorizes public utilities to enter into agreements to provide financial assistance for organizations to represent in regulatory proceedings before commission interests of low-income residential customers and residential customers that are members of environmental justice communities."*
 - Passed: [HB 2021, 100% Clean Energy for All](#) (summary from State Legislature website):
 - *"Requires retail electricity providers to reduce greenhouse gas emissions associated with electricity sold to Oregon consumers to 80 percent below baseline emissions levels by 2030, 90 percent below baseline emissions levels by 2035 and 100 percent below baseline emissions levels by 2040."*
 - Passed: [HB 2824, Healthy Homes](#) (summary from State Legislature website):
 - *"Establishes Healthy Homes Program within the Oregon Health Authority to provide grants to entities to provide financial assistance to low income households and landlords."*

- Washington PSR

- [2021 Legislative Wrap-Up](#)

- Includes notes on bills the chapter supported during the 2021 Washington State legislative session.

- Passed: [SB 5126](#), "Concerning the Washington climate commitment act."

- Creates a cap-and-trade program in Washington in order to achieve the goals set in the Washington Climate Commitment Act.
 - Note that WPSR was reluctant to support this bill. It was extremely divisive within the environmental community due to the potential to create or reinforce pollution hotspots, as well as exemptions provided to carbon intensive industries beyond the fossil fuel industry.
 - Governor Inslee ultimately vetoed a large portion of the provisions given to Tribal nations, generating widespread frustration and backlash from Indigenous communities and allies.

- Passed: [SB 5141](#), "Implementing the recommendations of the office of equity task force."

- Known informally as the "HEAL Act 2.0."
 - Summary from WPSR legislative wrap-up: *"Based on the 2019 HEAL act that established an executive task force to examine the ways state agencies make decisions with a specific focus on increasing equity, the HEAL act 2.0 implements the environmental justice task force recommendations to ensure a healthy environment for all. This legislation would make significant progress towards combating systemic racism in our state agencies and protecting health in communities disproportionately impacted by fossil fuel-related activity."*

- Failed: [HB 1084, Building Decarbonization](#) (summary from WPSR legislative wrap-up):

- *"One of Governor Inslee's top environmental priorities, HB 1084 would have made significant strides towards decarbonizing the building sector in Washington by phasing out the use of gas appliances for heating. Buildings are currently the largest growing source of carbon emissions in the state. Legislators elected not to give HB 1084 a hearing in the House Appropriations Committee. While we are disappointed, action at the city level has brought encouraging success with Seattle passing revisions to its commercial energy code. Similarly, Bellingham, Issaquah, Tacoma, and Olympia are also proposing action at the municipal level."*

- PSR Colorado

- [2021 Colorado Legislative Roundup from NRDC](#)

- Includes but does not indicate bills supported by PSR Colorado

- Failed: [SB21-200](#)

- A scoping climate bill, strongly opposed by Colorado's governor, supported by PSR Colorado.
 - Some of this bill was incorporated into HB21-1266 (below).
 - [Read the story from Colorado Rising](#), one of PSR Colorado's allies.

- Passed: [HB 21-1266](#) (summary from State Legislature website):

- *"Requires the air quality control commission to promote outreach to and engage with disproportionately impacted communities by creating new ways to gather input from communities across the state, using multiple languages and multiple formats, and transparently sharing information about adverse effects resulting from its proposed actions. Creates the environmental justice action task force in the department of public health and environment, the goal of which is to propose recommendations to the general assembly regarding practical means of addressing environmental justice inequities."*

- Passed: [SB 21-246](#) (summary from State Legislature website):

- *"The bill directs the public utilities commission (PUC) to establish energy savings targets and approve plans under which investor-owned electric utilities will promote the use of energy-efficient electric equipment in place of less efficient fossil-fuel-based systems. This directive would substantially follow the model of existing demand-side management (DSM) policies established by the PUC."*

- **PSR Colorado (Cont'd)**

- Passed: [HB 21-1286](#) (description from State Legislature website):
 - *"Concerning measures to improve energy efficiency, and, in connection therewith, requiring owners of large buildings to collect and report on energy-use benchmarking data and comply with rules regarding performance standards related to energy and greenhouse gas emissions and modifying statutory requirements regarding energy performance contracts."*
- Passed: [SB 21-264](#) (summary from [NRDC Colorado Legislative Roundup](#))
 - *"[R]equires gas distribution utilities to file a clean heat plan with the Public Utilities Commission that shows how it plans to meet the targets of a 5% reduction below 2015 greenhouse gas emission levels by 2025 and 20% below 2015 GHG emission levels by 2030."*
- Passed: [SB 21-108](#) (summary from [NRDC Colorado Legislative Roundup](#))
 - *"[A]dopts rules and penalties related to gas pipeline safety."*

- **Greater Boston PSR**

- Passed: [S.9](#) (passed in 2021, summary from Massachusetts' state government website): *"An Act creating a next-generation roadmap for Massachusetts climate policy."*
 - *"[S.9 includes] comprehensive climate change legislation that codifies into law the Baker-Polito Administration's commitment to achieve Net Zero emissions in 2050 and furthers the Commonwealth's nation leading efforts to combat climate change and protect vulnerable communities... establishes new interim goals for emissions reductions, significantly increases protections for Environmental Justice communities across Massachusetts, authorizes the Administration to implement a new, voluntary energy efficient building code for municipalities, and allows the Commonwealth to procure an additional 2,400 Megawatts (MW) of clean, reliable offshore wind energy by 2027."*

Medical society resolutions

- [“Resolution Informing Physicians, Health Care Providers, and the Public that Cooking with a Gas Stove Increases Household Air Pollution and the Risk of Childhood Asthma,”](#) Pennsylvania Medical Society House of Delegates
- [“Resolution Informing Physicians, Health Care Providers, and the Public 6 That Cooking with a Gas Stove Increases Household Air Pollution and the Risk of Childhood Asthma,”](#) submitted by Greater Boston PSR and passed by the Massachusetts Medical Society

“RENEWABLE” NATURAL GAS (“RNG”) AND “GREEN” HYDROGEN: FALSE SOLUTIONS

- “Renewable” natural gas (“RNG”)
 - [“Listener Mail: Is Renewable Natural Gas a Scam?”](#) by How to Save a Planet
 - An excellent, in-depth podcast episode explaining the nuances and problems of so-called “renewable natural gas” or “RNG”
 - [“Rhetoric vs. Reality: The Myth of ‘Renewable Natural Gas’ for Building Decarbonization,”](#) by Earthjustice and the Sierra Club
 - A long-form report exposing the problems of including RNG in building decarbonization strategies
- Hydrogen, including “green” hydrogen
 - [“Blending Hydrogen into Natural Gas Pipeline Networks: A Review of Key Issues,”](#) from the US National Renewable Energy Laboratory
 - This appears to be the sort of gas-hydrogen blend that Oregon PSR mentioned.
 - The concern is that policymakers and the public may be deceived to believe that a gas-hydrogen blend is safe and carbon-free.
 - [“Facts on Heating with Hydrogen,”](#) by Gas Leak Allies
 - Explains the various hydrogen varieties being marketed
 - Notes the lack of certification requirements for “green” hydrogen
 - [“Compressed Hydrogen Fires: The Canyon Incident,”](#) by LA County Fire Department

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