



GAS STOVE EMISSIONS: INDOOR AIR QUALITY & HEALTH EFFECTS

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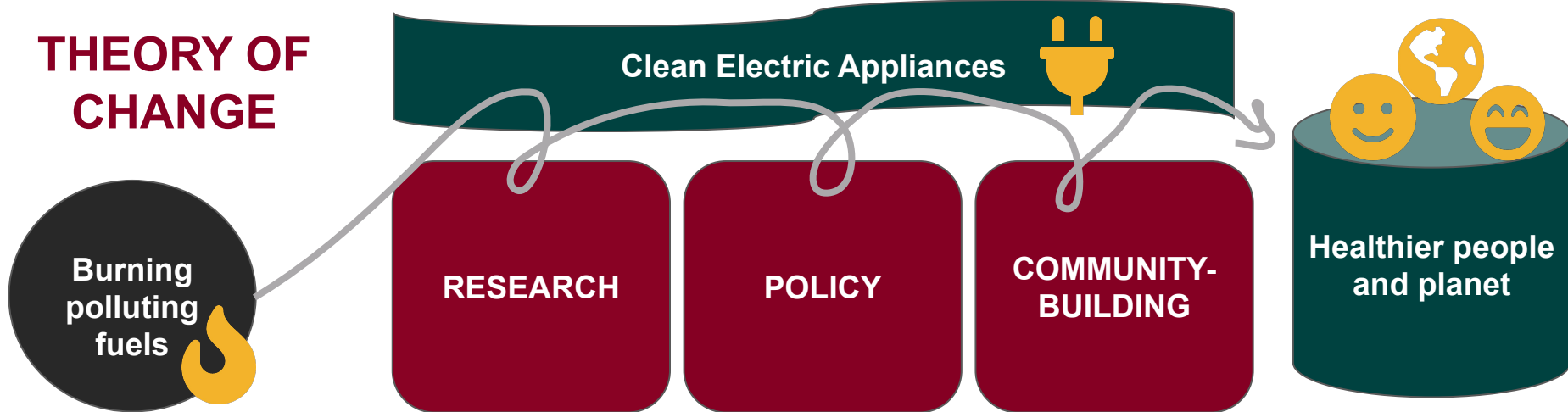
Electrification for Health



Stanford
University

- In the **Center for Human and Planetary Health**
- Vision: **Clean air and power for all**
- Mission: **To protect health through clean electric systems** that reduce air pollution indoors and outdoors and meet people's energy needs.

THEORY OF CHANGE



Agenda: Towards Healthy Electric Solutions: at 4 Levels



1. Individual: Options to Reduce Exposure at Home



Photo by [Cat Han](#) on [Unsplash](#)

- Cook on the **back burners**
- Use your **range hood**
- Open a **window**
- Install/check **carbon monoxide** detectors
- **Tighten valve** fittings

- **Use less gas:** electric kettle, toaster oven, air fryer, etc.
- Use a **plug-in cooktop** (~\$100)
- Use an **air cleaner** with HEPA & carbon filters

- Switch to **electric options**
- **Renters**, talk to your property manager

2. Community: Building Collective Momentum

Resources

- **Rebates & incentives:** at city or utility level
- Induction stove **lending libraries**
- Free **air cleaners** for low-income households (wildfire links)

Community Science

- Community **experts**
- Indoor + outdoor **air quality** monitoring, **gas leaks**
- Local media & awareness



Word of Mouth

- Addressing **disinformation**
- Family/friends as **trusted messengers**
- **Market** responds

Research

- Commercial kitchens
- Water heaters + furnaces
- Ultrafine particles
- Unvented heaters

3. Policy: Current Efforts to Address Appliance Pollution

Gas stove **warning label bills:**

- Colorado (passed, bill - lawsuit)
- Illinois (in progress)
- Massachusetts (in progress)
- New York (in progress)
- California (passed - vetoed)

All-electric **building codes:**

- State and citywide
- Kitchen ventilation requirements (California & Washington)

Indoor air quality **guidelines:**

- California updating 2005 guidelines
- Building Performance Standards

Zero-emission **appliance standards**

- California (Bay Area, LA region, statewide)
- Maryland
- Northeast states

4. Global: Opportunity to Advance the Cleanest Fuels

- **2B+** people still cook on wood & charcoal
- **730 million** people don't have electricity
 - 1 billion gained access since 2010
- **\$30M** HAPIN trial found switching from wood/charcoal → LPG (gas) did not have expected health outcomes
- The Intl Energy Agency estimates to achieve **universal clean cooking by 2040:**
 - LPG gas 63%, electricity 18%
- **Can we more ambitiously pursue the cleanest path?**



People wait to fill their empty LPG cylinders in New Delhi, after supply crisis due to war in Iran. Rajat Gupta/The Guardian



Thank you!

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