GAS LEAKS **ALLIES**

HYPE, NOT HOPE

NO HYDROGEN IN OUR HOMES

Hydrogen is the most common element in the universe. It can store and release energy, so it can be used as a fuel.

Hydrogen **is** a green solution for on-site storage of solar or wind energy, providing heat to heavy industry (think making steel or aluminum), and powering huge container ships.

Hydrogen **is not** a clean, safe, healthy, affordable, or equitable source of energy to use in our homes or to pipe through our communities. Here are some reasons why.

UNSAFE IN OUR HOMES AND STREETS

Hydrogen is highly combustible and more explosive than "natural" or fossil gas.

Hydrogen leaks more easily than fossil gas, increasing the risk of explosion and fire. Unlike fossil gas, you can't add a smell to it to tell if it's leaking.

Because hydrogen is piped under more pressure than gas, it can lead to larger leaks.

Hydrogen flames are almost invisible in daylight or bright light and don't emit much heat to warn you of a fire. You could unknowingly walk into a hydrogen fire on your street or in your kitchen.

UNHEALTHY INDOOR AIR

Burning hydrogen in your furnace or stove is worse for your health than using gas.

It produces even more nitrogen oxide, aggravating asthma and respiratory ailments.

Burning hydrogen-enriched gas creates up to six times as much nitrogen oxide as gas alone.

HIGH PRICE TAG

Hydrogen is more expensive than fossil gas.

Piping hydrogen will require replacement of most infrastructure and equipment.

Because hydrogen reacts with and breaks down metal, most of the pipes under our streets and in our homes would have to be replaced with plastic.

All the machines that pressurize and move gas would have to be replaced, since they need to be three times more powerful to move hydrogen.

American and Canadian appliances, furnaces, and boilers aren't certified to burn hydrogen, so the appliance or system has to be replaced.

All of these costs will be passed to customers.

UNJUST COSTS

As gas customers, we would pay a hydrogen surcharge.

We'll pay for the cost of making hydrogen as well as replacing the systems and appliances needed.

People who can afford better choices will buy super efficient electric heat pumps, burdening those who can least afford higher monthly bills with the additional cost of hydrogen.

GAS LEAKS **ALLIES**

NOT CLEAN OR GREEN

Making and burning hydrogen produces greenhouse gas emissions.

Over 98% of hydrogen produced today is made from fossil fuels, mostly fracked gas, resulting in more emissions than if we used those fuels directly.

Burning hydrogen generates nitrous oxide, the third most damaging greenhouse gas after carbon dioxide and methane.

Making hydrogen not only wastes energy, it also requires more fossil fuels and uses large quantities of fresh water.

In theory, we could make hydrogen using renewable energy, but we already need all the solar and wind power we can make for electricity. There's nothing leftover for hydrogen to heat our homes.

CLIMATE HARM

Using fossil fuels to make hydrogen for heating our homes would release huge amounts of methane and carbon dioxide into our atmosphere.

Methane is approximately 86 times more heat-trapping than carbon dioxide for the first 20 years.

Carbon dioxide also traps heat and stays in our atmosphere for hundreds of years.

Gas companies promise to capture and store the carbon dioxide emitted by making hydrogen, but no technology to do that has been shown to work or be affordable. It's an empty promise.

WASTE OF ENERGY

Much more hydrogen is needed to produce the same amount of power as electricity or gas.

For example, from the same 100 units of energy:

- An air-source heat pump makes 270 units of heating.
- Hydrogen makes just 46 units of heating.

Hydrogen has less energy content than methane, so to make hydrogen requires fracking 30% more gas.

Heat pumps, which run on electricity, cost half as much or less to operate as hydrogen furnaces, and also provide air conditioning, which is increasingly necessary for our safety and health.

Invisible hydrogen fire in Los Angeles, 2018

BAD IDEA IN OUR HOMES AND STREETS

Making, piping, and burning hydrogen to heat our homes is an expensive, unjust, wasteful, dangerous, and toxic proposal by our gas companies.

We have more affordable, more efficient energy systems like heat pumps and networked geothermal that can be scaled up fast for a safer, healthier, and more equitable world.

PASS THE WORD: No hydrogen in our homes and streets

Now that you know, please share this information with your friends, neighbors, and decision-makers so we can all put our energy into smart climate solutions.