



Fossil Fuels

Every community member is safe from the risks posed by fossil fuels and energy infrastructure.

Goal: Every community member is safe from the risks posed by fossil fuels and energy infrastructure.



Description

Fossil fuels endanger the planet and disproportionately harm frontline communities by fueling climate change and accelerating the environmental degradation of ecosystems, among other harms. At the same time, fossil fuels have also been an important part of the economy, providing the vast majority of transportation fuels and a large portion of the commercial and residential heating fuels. The infrastructure that supports the use of fossil fuels, from well heads in far off places and large tank farms that supply a region, to a single gas pump fueling a car, is woven into the fabric of communities. The risks may be hard to recognize at first sight due to the ubiquity of fossil fuel infrastructure, but these systems can pose significant risks and cause serious harm when accidents occur.

The 2025 Oregon Department of Energy's Energy Strategy identified various pathways to meeting Oregon's energy policy. Under its least-cost pathway, total fuel consumption will drop by 70 percent by 2050, and most remaining fuels will shift from fossil-based to low-carbon alternatives. A transition to cleaner sources of fuel will need to be carefully managed; legacy systems need to be maintained in good working order up to the point that they are no longer needed. At the same time, as we consider alternative technologies - like low carbon fuels - we must also be thoughtful about any risks they may pose to our communities in the future.

In addition to the risks that fossil fuel use poses to the health and well-being of individuals and the planet, the infrastructure supporting the fossil fuel economy poses a significant threat in Multnomah County specifically. Multnomah County is home to the Critical Energy Infrastructure (CEI) Hub, a stretch of fuel depots along the Willamette River, north of downtown Portland. The CEI Hub stores 90% of the liquid fuels used in Or-

egon and is situated on soils that will liquefy during a major earthquake. The CEI Hub poses a grave threat to the community that is being addressed through new state rules like the Fuel Tank Seismic Stability Program. Other facilities that store hazardous toxic inhalants, and smaller fuel facilities are not currently regulated for seismic stability.

How we measure progress

Indicator 1: Percent of Multnomah County energy derived from fossil fuels.

Description: Gasoline, diesel fuel, and natural gas are the three primary fossil fuels combusted in Multnomah County for energy. In addition, significant portions of the electricity used in Multnomah County are generated from the combustion of coal and natural gas. Fossil fuels will decrease over time as a percentage of total energy use due to electrification and the use of other alternative clean fuels.

Current data:

Energy Type	% Fossil Fuel Based
Electricity	63% (Coal, Methane)
Gasoline	90%
Diesel	70%
Natural Gas	~99% (Methane)

Indicator 2: Number of annual carbon monoxide poisonings resulting in an emergency room or urgent care (ED/UC) visit.

Description: Carbon monoxide is a colorless, odorless toxic gas that can result in injury or death at sufficient exposure levels. Carbon monoxide is a by-product of combustion. A combustion appliance that is not properly vented to the outdoors can result in a dangerous build up of carbon monoxide.

Current data: 25 ED/UC visits October 2024 - April 2025

Data Source: Oregon ESSENCE, Oregon Health Authority

Strategy: Regulate liquid fuel storage facilities not currently covered by the DEQ Fuel Tank Seismic Stability Program.



Why does this matter?

According to the Department of Environmental Quality there are 8 facilities with fuel storage capacity between 50,000 - 1 million gallons in Multnomah County not regulated by the DEQ Fuel Tank Seismic Stability Program. These facilities may have a similar seismic risk profile to regulated facilities. DEQ anticipates spills from these facilities after an earthquake that would result in significant negative public health and environmental impacts. These smaller facilities, which still pose a substantial risk, should be included in a comprehensive above ground storage safety program, similar to the existing state-wide below ground storage program.

STRATEGY CATEGORY

- County Strategy
- Investment Opportunity
- Community Leadership

STRATEGY TYPE

- Advocate
- Research
- Convene
- Implement

COUNTY CAPACITY

- Existing
- Additional
- New

COUNTY CONTROL



COUNTY INFLUENCE



COUNTY PRIORITY



Putting this into practice

- Conduct a study of above ground fuel storage facilities not covered by the DEQ Fuel Tank Seismic Stability Program to understand the geographic distribution and demographic risks from tank failures.
- Advocate for the creation of a comprehensive above ground storage safety program.

Lead Department(s)

Oregon Legislature, Oregon Environmental Quality Commission, Oregon Department of Environmental Quality

Strategy: Protect communities from uncontrolled release of stored hazardous materials.

Why does this matter?

A 2023 Multnomah County report Risk of Earthquake-Induced Hazardous Materials Releases in Multnomah County found serious risks posed by the storage of hazardous industrial chemicals, including toxic inhalation hazards, that are vulnerable to uncontrolled release because of an earthquake. Most of the highest-risk hazardous facilities in Multnomah County are in liquefaction zones in North Portland, and along the Columbia River Slew. These areas also tend to have higher proportions of environmental justice communities. The report models the release from 4 facilities that store toxic inhalants in above ground tanks and found that a seismically induced uncontrolled release could result in up to 2,500 deaths and 17,000 potential injuries. The report identified 70 type 2 facilities in Multnomah County that store gaseous hazardous materials that may pose a public health threat in case of release.

Much is still unknown about the extent of this threat, including the risks from facilities in neighboring jurisdictions. More analysis is needed to better understand the risk, current industry and regulatory practices, and what steps are needed to better protect public health. Many communities impose a fee on the storage of hazardous materials both to fund emergency response, and to encourage the use of alternative materials that pose less of a risk to the public.

Putting this into practice

- Explore seismic requirements for stored hazardous materials identified in the County's Risk of Earthquake-Induced Hazardous Materials Releases in Multnomah County report, and conduct further modeling to understand the scope of risk posed to Multnomah County residents.
- Work with state and local jurisdictional partners to explore and support development of a hazardous material storage fee to fund better emergency response capability, especially in areas close to hazardous material storage.

Lead Department(s)

Office of Sustainability, Office of Emergency Management

Supporting Department(s): Oregon State Legislature

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Low Med High

COUNTY INFLUENCE



Low Med High

COUNTY PRIORITY



Low Med High

Strategy: Research the potential public health implications of hydrogen when used to replace natural gas for residential and commercial use.

Why does this matter?

Green hydrogen is made using renewable electricity to split water molecules into hydrogen and oxygen. Hydrogen, when burned, does not create carbon dioxide and is therefore a carbon-free energy carrier when made with renewable energy. Green hydrogen can also be used to store renewable energy for later use, or replace fossil fuel derived hydrogen used in many chemical manufacturing applications. Many studies suggest that green hydrogen will play an important role in a fully decarbonized future.

As regulatory mandates require the use of less carbon intensive energy sources over time, hydrogen has been proposed as a way of reducing the carbon intensity of natural gas by blending it with the methane gas supply that reaches homes and businesses. Hydrogen, however, can present new safety challenges. The gas system is made of many interconnected components, transmission pipelines, the distribution system, and home appliances, for example. Understanding how various hydrogen blending rates interact with the legacy system under specific conditions - like distribution system pressures and distribution system materials - will be critical for understanding safety. Hydrogen can ignite more easily than methane, and can also leak more easily, in part because of the potential to embrittle metal distribution system components and leak through polymer based pipes. Hydrogen blend safety with existing home appliances also needs more study to understand safety issues like flashback and air pollution.

In recognition of the potential safety challenges, the 2025 Oregon Legislature passed Senate Bill 685 that requires gas companies to inform customers and the Oregon Public Utility Commission if they plan on blending more than 2.5% hydrogen into the gas system. Additional research is needed to fully understand safe blending rates and the economic and environmental value of hydrogen blending.

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Putting this into practice

- Request that state agencies:
 - Review literature and convene experts to compile a technical understanding of potential benefits and risks.
 - Host community forums to bring together parties interested in understanding the potential benefits and risks of hydrogen as a fuel source.
 - Use gathered information to inform future planning and regulatory decisions.
- Advocate for additional regulations if appropriate.

Lead Department(s)

Oregon State Legislature, Oregon Public Utility Commission, Oregon Department of Energy

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COUNTY INFLUENCE



COUNTY PRIORITY



Strategy: Manage the transition of fossil fuel service “gas” stations.



Why does this matter?

Gasoline and diesel fuel can be dangerous if not properly handled. As a result, gas stations are subject to a variety of regulations to ensure safety. Regulatory requirements include fire suppression standards, underground storage tank regulations, and air quality permits. The introduction of battery electric vehicles (BEV) presents a new challenge for gas stations businesses, including making the decision to include new charging infrastructure to compliment gas and diesel sales. Gas stations that serve a primarily local market may be particularly hard pressed because about 80% of BEV charging happens at home, and smaller stations may lack the capital assets to invest in charging infrastructure.

With the sales of BEVs increasing, Oregon is entering a period of mid-transition. This is a time of overlap between existing fossil fuel infrastructure and a future state where BEVs are dominant. The mid-transition requires deliberate management to ensure continued access to fueling stations, while also focusing on rapid phase-in of clean technologies. Ideally, management occurs in such a way where the cleanest and most efficient services are not inadvertently lost.

Putting this into practice

- Conduct research to understand thresholds in fossil fueling infrastructure that may lead to closures and how the transition can be effectively managed to limit disruptions and maximize benefits.
- Advocate for additional regulatory oversight of fossil fueling stations in Multnomah County that considers opportunities to transition sites to EV charging and remediation of site contamination when closure occurs.
- Consider strategies, like a prohibition on new gas station developments in Multnomah County, that also recognize the need to modernize existing fueling stations, meet changing geographic demand, and minimize environmental harms.

Lead Department(s)

Oregon Department of Energy, Oregon Department of Environmental Quality, Cities

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COUNTY PRIORITY



Strategy: Identify and pursue regulatory pathways to limit the growth of the natural gas system and support pathways for integrated energy planning across electric and gas utilities.

Why does this matter?

The transition to clean energy and the strategic electrification of end uses, like home heating, need to be carefully managed because the natural gas system currently provides substantial winter heating resources for Multnomah County residents. Natural gas also provides backup power and home heating for homes with gas generators or gas fireplaces respectively. Amidst growing demand for electricity, a poorly managed transition could lead to unintended consequences like overloaded electrical distribution circuits leading to localized outages, or insufficient power supply during periods of high demand leading to brownouts or blackouts. Similarly, a poorly managed transition could leave those least able to transition away from the use of gas responsible for the growing costs associated with a gas system that is losing customers and is therefore dividing its costs between a shrinking pool of customers. Integrated energy planning is needed to maintain the heating reliability and resilience of residents while also managing the transition to renewable energy.

The cost effectiveness of renewable natural gas and hydrogen as decarbonization strategies for the gas system are uncertain and the topic of some debate. A low carbon future will likely have a much smaller gas distribution network. Households with older inefficient gas furnaces can already save on heating bills by switching to high efficiency heat pumps, and the Oregon Energy Strategy least cost pathway assumes most households will use electricity for home heating by 2050. Limiting the growth of the gas system now can ensure adequate gas supplies for current needs while preventing investments in new assets that may not be needed before the end of their useful life or their full financial depreciation. This strategy aligns with regional precedents in limiting gas system expansion and the Oregon Energy Strategy's call for data sharing and joint planning across electric and gas utilities to ensure energy capacity and reliability.

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Putting this into practice

- Advocate at the state level, and explore local legal pathways, to limit expansion of the natural gas system in Multnomah County.
- Explore regulatory options for limiting the risk to residential customers from future stranded assets of the gas system, including accelerated depreciation of existing assets, enhanced assistance for low and moderate income households, and other approaches.
- Advocate for, and engage in, joint energy planning across the gas and electric energy systems to ensure reliability and support a just transition.

Lead Department(s)

Office of Sustainability

Strategy: Add seismic safety valves to residential and commercial natural gas connections.

Why does this matter?

Natural gas leaks are dangerous and require immediate action. In the case of an earthquake, the connection point between a building and the gas system, typically near a gas meter, can break, leak, and even catch fire. Automatic shutoff valves can stop the flow of gas and prevent the uncontrolled release of gas.

According to Northwest Natural (NWN), overlapping redundancies exist in their system to limit damage to the gas system from an earthquake. These include valves that will automatically close if there is a loss of pressure, flexible polymer distribution pipes that are more resistant to earthquakes, and investments in retrofitting gas meters with smart meters that can shut off automatically. NWN is currently modernizing about 10% of gas meters with ultrasonic smart meters that have automatic shutoff capabilities. Dangers still exist, however, and automatic shutoff valves installed on the customer side of the meter can stop the flow of gas between the meter and the customer and provide an extra layer of protection. These valves are relatively inexpensive, but must be installed by a professional.

Putting this into practice

- Require seismic shutoff valves for new installation of gas meters that do not have a built-in emergency (seismic) shutoff.
- Explore new programs that help gas customers retrofit existing gas connections with emergency (seismic) shutoff valves.

Lead Department(s)

Oregon State Legislature, Oregon Public Utility Commission

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