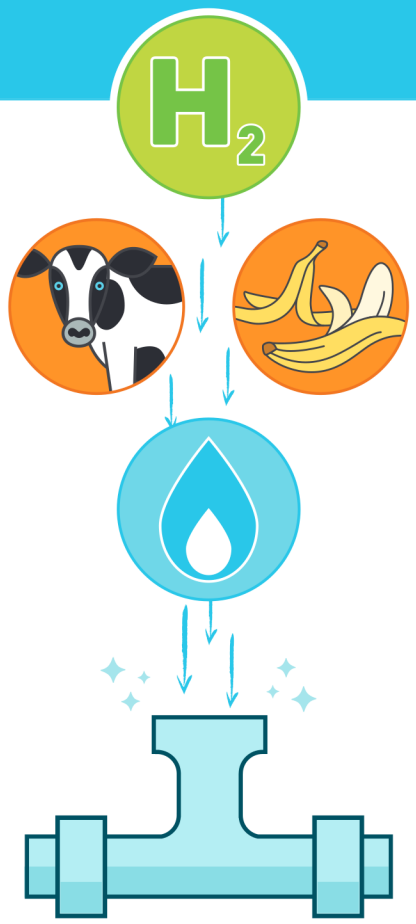
LESS WE CAN™

MEET THE NEWEST RENEWABLE: RENEWABLE NATURAL GAS



WHERE IT COMES FROM

Renewable natural gas is made from organic materials like wood, food and even human waste. When all of these materials decompose they produce methane, which can be converted to renewable natural gas and delivered through existing infrastructure.

HOW MUCH IS THERE?

An American Gas Foundation study estimates that the U.S. could produce more than 4,500 trillion BTU of renewable natural gas by 2040—that's 93% of average residential usage nationally.[1]

In Oregon, the state's Department of Energy found nearly 50 billion cubic feet of renewable natural gas sources—that's equivalent to the total amount of natural gas used by all Oregon residential customers today.[2]

As of 2020, about 130 RNG facilities are operating in the U.S., with nearly as many in development or under construction. More at www.rngcoalition.com.

HOW DOES IT HELP?

Renewable natural gas has a similar climate benefit to wind and solar energy. It dramatically reduces greenhouse gas emissions that contribute to climate change.

OTHER SOURCES: RENEWABLE HYDROGEN

Unlike large-scale utility batteries that can only store energy for several hours, renewable hydrogen produced by wind and solar can be stored for months and months, then delivered in our existing pipeline system when it's needed. Developing both renewable natural gas and renewable hydrogen provides a potential path to 100% renewable energy in the pipeline system.

OREGON'S RNG LAW

The 2019 Oregon Legislature passed groundbreaking legislation (Senate Bill 98), creating the opportunity for utility purchases of renewable natural gas and renewable hydrogen. The new Oregon law sets voluntary targets to dramatically increase the amount of renewable natural gas that can be delivered to customers. The law includes price limits to protect customers as this market develops.

COSTS

Renewable natural gas costs more to produce than conventional natural gas but as this market grows and matures, these costs will decline.

The cost of RNG is competitive as a way to reduce greenhouse gas emissions. That's especially true when compared to alternatives, such as switching all home heating to electric equipment.

ADDING RNG IN 2021

NW Natural plans on connecting three regional renewable natural gas projects to our pipeline system in 2021: the City of Portland's Columbia Boulevard Wastewater Treatment Plant, Metropolitan Wastewater Management Commission's Lane County facility, and Shell New Energies Junction City biomethane plant.

We've also formed a new partnership to develop and produce renewable natural gas from waste at Tyson Foods facilities. The first four locations under consideration could produce enough energy to heat the homes of 18,000 Oregon customers.

Learn more at **LessWeCan.com**.

NW Natural®

SOURCES

[1] American Gas Foundation, "Renewable Sources of Natural Gas: Supply and Emissions Reduction Assessment," 2019. Online at www.gasfoundation.org.

[2] Oregon Department of Energy, "Biogas and Renewable Natural Gas Inventory SB 334 (2017)," 2018. Online at www.oregon.gov/energy.