

Renewable natural gas: basics and benefits

CenterPoint Energy is committed to innovative technology that meets energy demands. Two examples of this innovation are renewable natural gas (RNG) from organic sources and from power-to-gas.

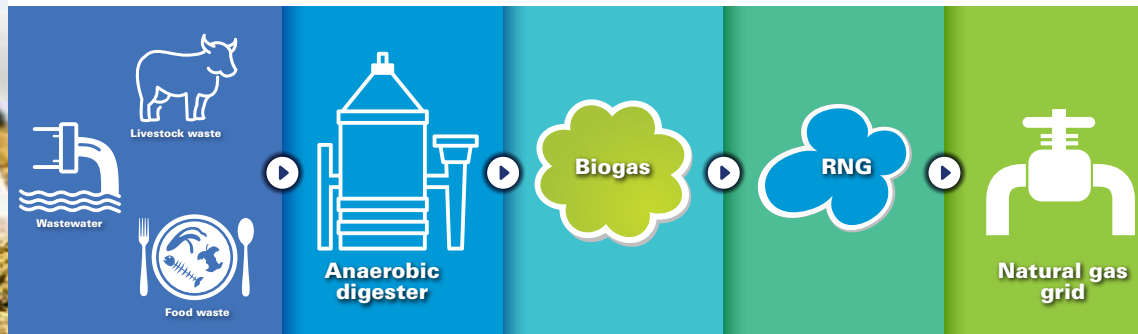
What is RNG?

RNG is a low- or no-carbon renewable gas derived from renewable organic resources (such as animal manure, wastewater and landfills) or from renewable electricity (such as wind or solar). The status of RNG can be compared to renewable electricity technologies in the early 2000s. There is considerable potential, but supportive public policies and incentives are needed to take advantage of this potential.

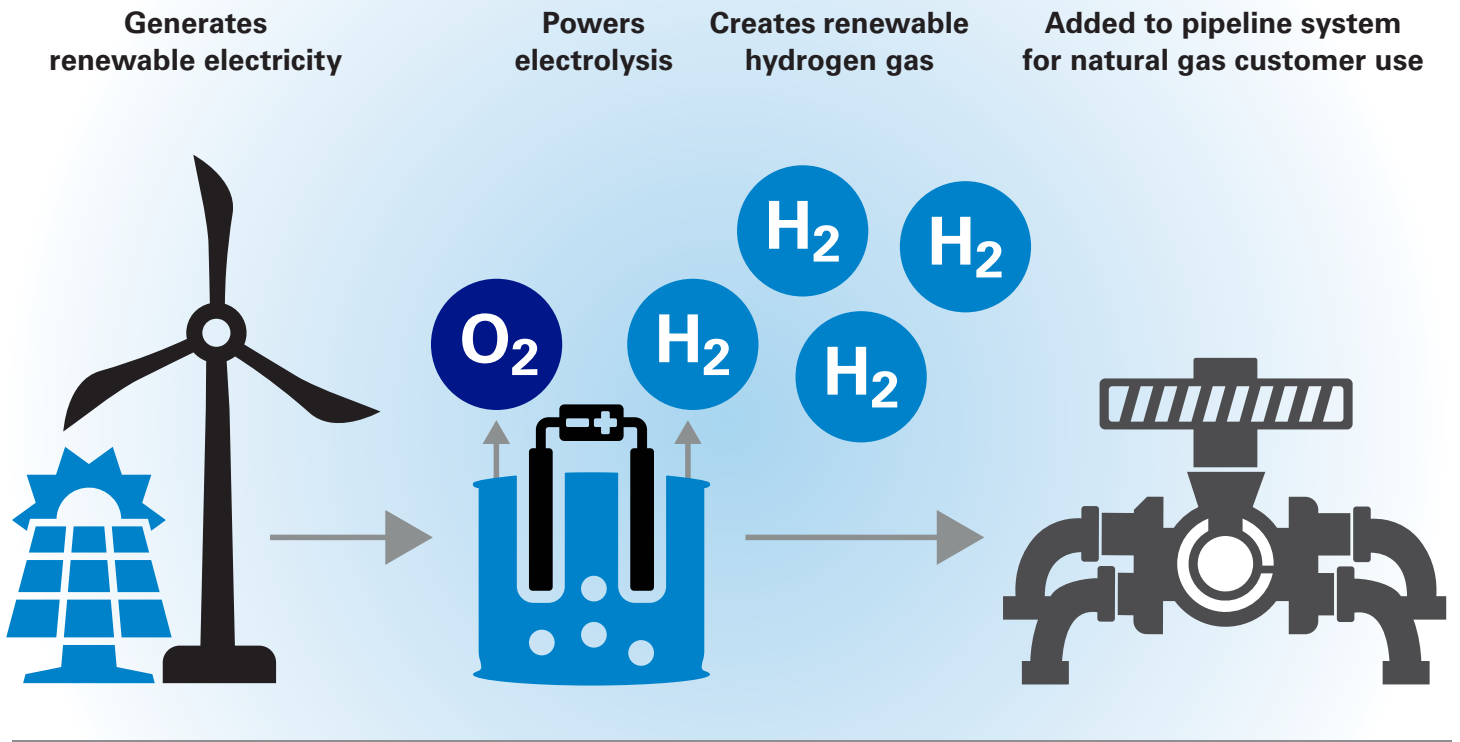
Benefits of RNG

- Reduces greenhouse gas emissions
- Supports rural economic development
- Diversifies energy sources
- Improves waste management

Where organic RNG technology is today



- RNG derived from organic waste is already commercially available but is currently more expensive than conventional natural gas. As the industry grows, prices may decline.
- The organic RNG industry is growing rapidly. Between 2015 and 2019, the number of operating RNG facilities in North America has more than doubled.
- CenterPoint Energy is developing a proposal to enable producers of RNG to connect with its Minnesota distribution system.



Where power-to-gas is today

- Promising technologies such as power-to-gas that create zero-carbon hydrogen gas from renewable electricity are not yet commercially available in the United States. However, they have been proven at pilot scale and are becoming more common in Europe.
- Renewable hydrogen can serve as fuel and be injected safely into the existing gas system up to certain limits.
- Renewable hydrogen can also be combined with waste carbon to produce net-zero-carbon methane, the primary component of natural gas.

What states are doing

Location	Action
Wisconsin, Iowa, Michigan, Indiana, Ohio, Nebraska, Missouri and other states	Are already producing renewable gas
Oregon, Washington and Nevada	Have already adopted legislation supporting RNG
Maine and Vermont	Have voluntary RNG purchase programs for utility customers