

HYDROGEN'S ROLE IN THE LOW-CARBON ECONOMY

Hydrogen will play a key role in the transition to a clean energy economy across many sectors. Hydrogen does not release greenhouse gas emissions during combustion and can generate electricity, fuel vehicles, and provide heat for homes, businesses, and industry.

H₂ PRODUCING HYDROGEN

Hydrogen can be produced in several ways. The two most common methods include:

STEAM-METHANE REFORMING (SMR)

SMR uses high-temperature steam to heat methane from natural gas, producing hydrogen and carbon dioxide. More than **90%** of hydrogen produced today is through SMR.¹

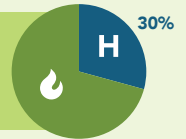
ELECTROLYSIS

Electrolysis uses an electrical current to split water molecules into oxygen and hydrogen.

BLENDING HYDROGEN WITH NATURAL GAS

Natural gas pipelines and combustion equipment can incorporate hydrogen in blends up to **30%**, depending on equipment design and application.²

NATURAL GAS PIPELINES AND COMBUSTION EQUIPMENT



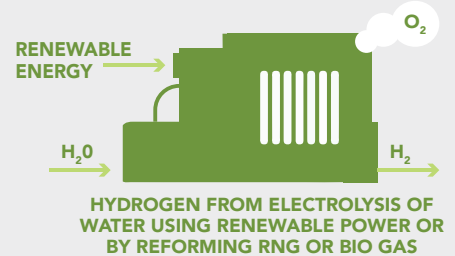
BLUE AND GREEN HYDROGEN

Hydrogen produced through low carbon pathways, such as blue or green hydrogen, can be injected into existing natural gas pipelines to lower the carbon content of the fuel.

BLUE HYDROGEN



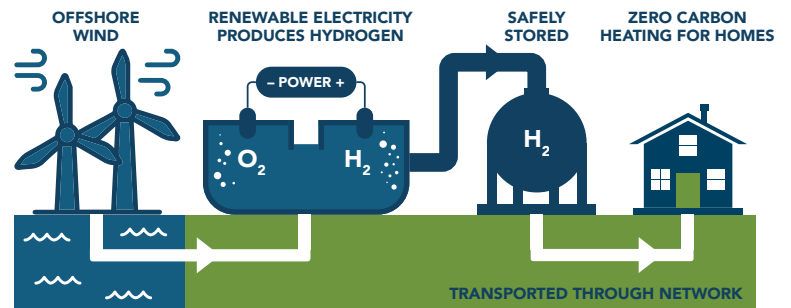
GREEN HYDROGEN



HYDROGEN PRODUCTION FROM EXCESS RENEWABLES

Excess renewable energy can be used to power electrolyzers and produce hydrogen. Existing natural gas infrastructure can be used to provide long-duration storage of hydrogen, complementing shorter-duration battery storage systems.

A WORLD-FIRST FOR CLEAN HYDROGEN



Source: DOE, "How Wind Energy Can Help Hydrogen Contribute to a Zero-Carbon Future"

HYDROGEN'S APPLICATIONS

- POWER SECTOR:** Hydrogen can be used to provide prime or backup power
- TRANSPORTATION SECTOR:** Hydrogen can be used to power trucks, cars, marine and rail
- INDUSTRIAL SECTOR:** Hydrogen offers a promising pathway to decarbonization