

Carbon Capture

Low-Carbon Power from Natural Gas: SMR + carbon capture + fuel cells - blue-hydrogen power for gas-supplied sites.

Overview

Where green hydrogen is not yet available, EH Energy offers an optional low-carbon power pathway: natural gas is converted to PEM-grade hydrogen on site via steam methane reforming (SMR), the hydrogen powers EH Energy's fuel cell gensets and a carbon capture unit recovers the CO₂ from the reformer flue gas as liquid CO₂. This turns standard pipeline gas into firm, low-carbon electricity - today - while preserving a seamless upgrade path to green hydrogen as supply matures.

How It Works

Reform

The SMR unit (mixing, desulfurization, reforming, purification) produces hydrogen at 99.999+% purity - meeting PEM fuel cell quality requirements directly, with no additional purification stage.

Generate

EH Energy fuel cell gensets convert the hydrogen to electricity at 50%+ electrical efficiency, with heat recovery available for a further 20–30%.

Capture

the carbon capture unit recovers CO₂ from the reformer flue gas stream, delivering approximately 6 tons per hour of liquid CO₂ per reformer train.

CO2 Disposition Options

Blue hydrogen (full decarbonization):

Captured CO2 is sent to permanent geological storage or mineralization, ensuring long-term sequestration and qualifying the power as low-carbon.

Industrial recycling (circular use):

Recovered CO2 is supplied to industrial users (e.g. chemical processes), keeping it within existing industrial value chains.