

Reducing Carbon Emissions with Natural Gas

The natural gas industry is committed to reducing carbon emissions. By leveraging carbon offsets, Renewable Natural Gas (RNG) certificates, carbon capture and sequestration technologies, natural gas can help achieve our low carbon energy goals affordably while maintaining reliability.

Where does Carbon Dioxide Originate?

Carbon Dioxide (CO₂) and other greenhouse gas emissions are produced by a number of sources. The graphic on the right breaks out sources and percentages of several greenhouse gasses being produced.

What are Carbon Offsets?

Consumers may be able to purchase carbon offsets from their utility provider or other companies to reduce their carbon footprint. Carbon offset projects are specific activities intended to reduce greenhouse gas emissions. Offsets work by eliminating emissions elsewhere to balance out carbon produced in another location.

The purchase of carbon offsets may be used to fund greenhouse gas reduction projects that may not have otherwise been possible. Emissions reduction credits should be certified by a verified 3rd party and show a real and permanent emissions reduction.¹

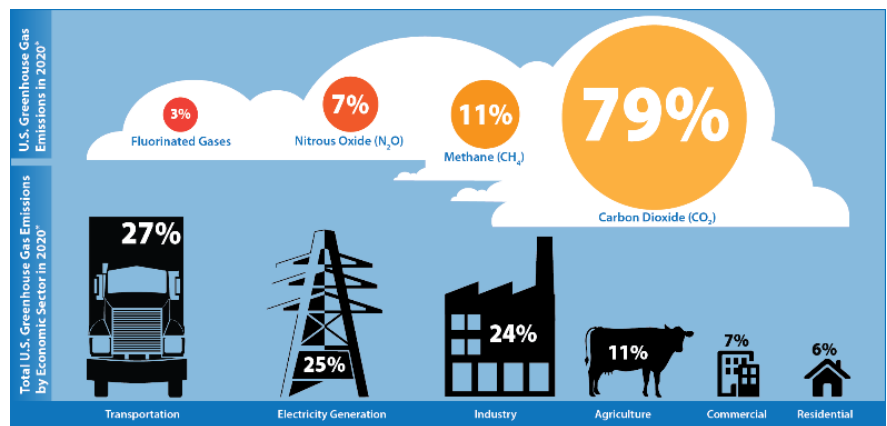


Figure 1 Source: <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>

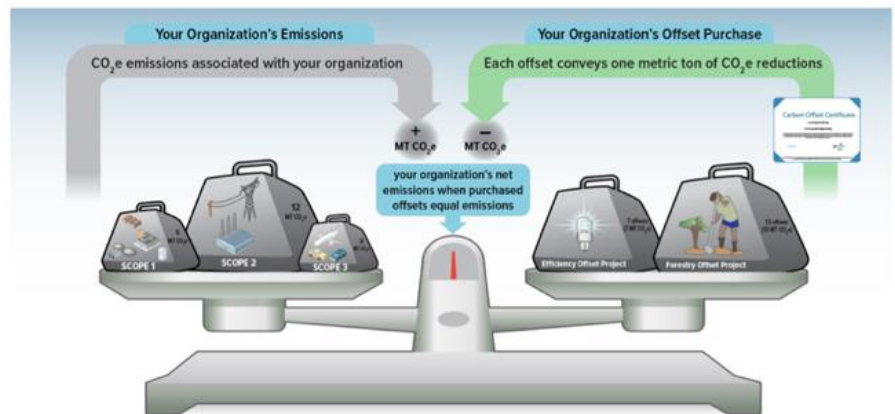


Figure 2 Source: https://www.epa.gov/sites/default/files/2018-03/documents/gpp_guide_recs_offsets.pdf

¹ https://www.epa.gov/sites/default/files/2018-03/documents/gpp_guide_recs_offsets.pdf

How do Offsets Reduce Carbon Emissions?

Carbon offsets are measured in metric tons of CO₂ or CO₂ equivalent and can be purchased to offset not just carbon but other common greenhouse gases. Offsets serve as credits that balance carbon-generating activities of residents and businesses from the three scopes of emissions recognized by the EPA.

What are RNG Certificates?

Similar to carbon offsets, natural gas consumers can purchase RNG certificates as an alternative way to balance out emissions from gas consumption. An RNG certificate is an instrument that gives the holder ownership of the greenhouse gas emission reduction that was generated by the capture of biomethane that is processed into renewable natural gas. Also called buying “virtual RNG”, purchasing an RNG certificate mitigates natural gas consumption with the goal of reaching zero Scope 1 emissions.²

Advancements in Carbon Capture and Sequestration Technology

Carbon capture and sequestration refers to technologies that remove carbon from exhaust emissions and store it safely where it causes little to no environmental impact. Several techniques already exist that significantly reduce greenhouse gases when consuming natural gas.

Geologic Sequestration: CO₂ is stored deep below the surface of the Earth by injecting it into porous rock formations where it cannot escape.³

Biologic Sequestration: By feeding CO₂ to plants, their natural growth process converts carbon into plant matter.

Commercial Applications: Captured carbon can be repurposed by industry across a range of commercial applications, including enhanced oil recovery in wells, food and beverages, and fire-fighting equipment.

Flue Gas Conversion: Carbon captured from flue gas can be converted into carbonate (pearl ash) for the manufacturing of soaps and detergents.

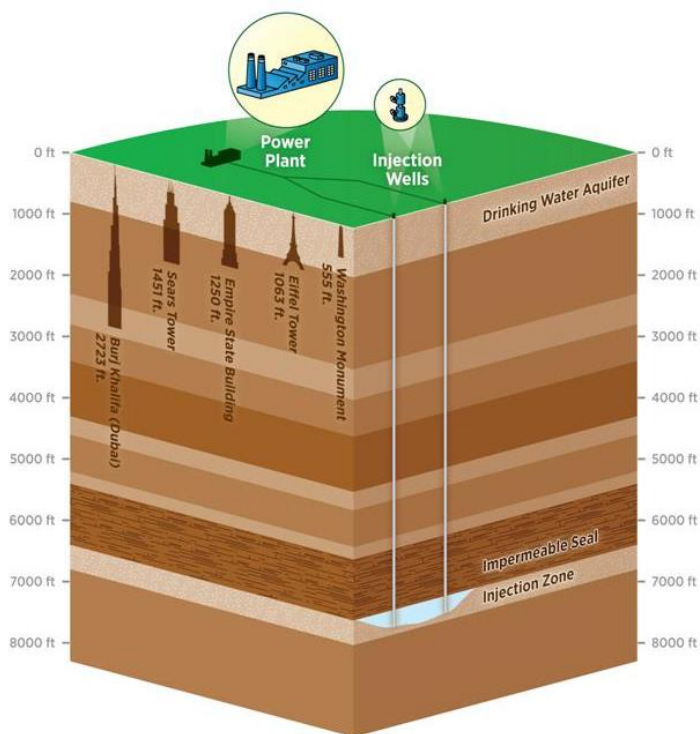


Figure 1 Source: https://19january2017snapshot.epa.gov/climatechange/carbon-dioxide-capture-and-sequestration-overview_.html

² https://www.aga.org/contentassets/92d36ed2c83941d0b44e20b82e1a476e/3-evaluating-the-emission-benefits-of-mg-and-its-role-in-climate-and-emission-reduction-policies_weisberg.pdf

³ <https://www.usgs.gov/faqs/whats-difference-between-geologic-and-biologic-carbon-sequestration>