



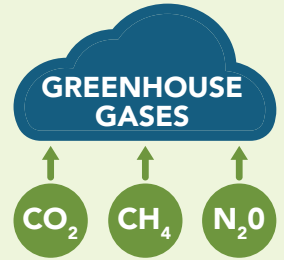
# CARBON FOOTPRINT AND CLIMATE CHANGE

Understanding carbon footprints is critical to reducing carbon emissions. A carbon footprint quantifies the amount of emissions released by activities such as generating electricity, driving, farming, and manufacturing.



## EXPLAINING THE GREENHOUSE GAS EFFECT

The greenhouse gas effect, which happens when greenhouse gases collect in the earth's atmosphere, results from the presence of carbon dioxide, nitrous oxide, methane, and other greenhouse gases in our atmosphere.



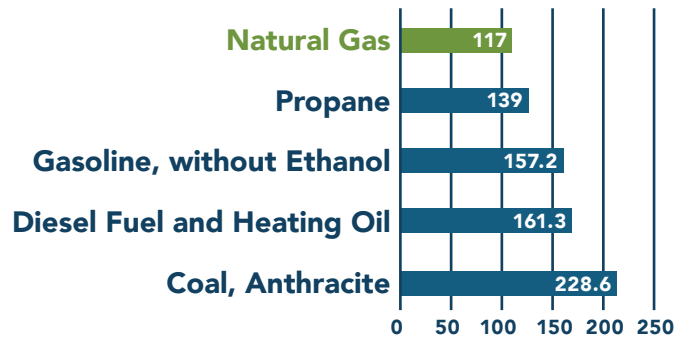
Two times more CO<sub>2</sub> is being emitted than can be naturally sequestered



## CARBON CONTENT OF DIFFERENT FUEL SOURCES

The carbon intensity (i.e., the amount of CO<sub>2</sub> emitted per unit of energy consumed) of natural gas is lower than all other fossil fuels.<sup>1</sup> The fact that natural gas has replaced coal as the top fuel in the U.S. electricity sector is one of the main reasons why this sector has been able to reduce its emissions over the last 10 years.<sup>2</sup> Natural gas vehicles have reduced carbon emissions in the transportation sector.

### CO<sub>2</sub> EMISSIONS, LB/MMBTU



Source: EIA, Carbon Dioxide Emissions Coefficients



## GREENHOUSE GAS EMISSIONS BY SECTOR

75% of greenhouse gas emissions in the United States comes from the transportation, electricity generation, and industrial sectors, with the rest coming from agricultural operations and commercial and residential buildings. Plus, over half of energy consumption in U.S. households is used for space heating and cooling.<sup>3</sup>



27%  
TRANSPORTATION



25%  
ELECTRIC GENERATION



24%  
INDUSTRY



11%  
AGRICULTURE



7%  
COMMERCIAL



6%  
RESIDENTIAL

Total U.S. Greenhouse Gas Emissions by Economic Sector in 2020



## GHG EMISSION CATEGORIES

Greenhouse gas emissions can be categorized into three different groups based on when and where they are emitted across the value chain of a good or service. These categories include:<sup>4</sup>



SCOPE 1  
DIRECT EMISSIONS



SCOPE 2  
INDIRECT EMISSIONS



SCOPE 3  
OTHER INDIRECT EMISSIONS