Natural Gas: Cleanest Burning Fossil Fuel

Understand the numbers behind the claim

Many in Congress are concerned about climate change and, as a result, understanding key pollutants or greenhouse gas emissions has taken center stage. The way electricity is produced is an important part of the discussion.

The table shows the annual tons of emissions by fuel type from the generation of electricity for 1,000 households served. The level of emissions varies significantly for different fuels. As widely understood, non-combustion renewables, such as hydro, solar and wind, as well as nuclear emit no key air pollutants in the conversion of fuel to electricity.

Perhaps less widely known, natural gas is the cleanest of all fossil fuels and has been credited by the EPA for helping meet the nation's first goal for air quality improvement standards. For example, sulfur dioxide is a key component in acid rain, but natural gas has virtually no SO_2 (sulfur dioxide), which is part of the reason many utilities have increasingly chosen to build clean natural gas-fired plants to create electricity.

There are other reasons natural gas is increasingly chosen as the "go-to" electric generation energy source. Natural gas emits lower levels of nitrogen oxide (NOx)–one of the main ingredients involved in the formation of ground-level ozone. Natural gas also emits lower levels of particulate matter (PM) or soot, and CO_2 (carbon dioxide), which has been blamed by many for global warming, and only trace amounts of mercury.

Natural gas emits the least pollution of all fossil fuels, making it an attractive source for electricity generation. This is fortunate because we must remain dependant on fossil fuels as we explore a transition to a world with less emission-intensive ways of producing electricity.

Emissions from generating electricity

Numbers indicate tons per year per thousand households

	Wood	Waste	Coal	IGCC*	Natural Gas	Geo-thermal	Nuclear	Hydro	Solar	Wind
CO	51	9	5.8	1.2	1.5					
CO_2			9,362	8,377	3,558					
NOx	28	44	3.4	1.7	0.3					
PM	2.7	2.2	0.9	0.3						
VOC	5.6	0.9	0.2	0.1						
SO_2	2.8	18	5	0.9	0.2					
Mercury			0.0001	trace	trace					

Source: R. W. Beck

Most — Middle — None

* Coal to natural gas