

Energy Access Brings People Out of Poverty

Across the world, there are:

- **1 billion** people without electricity
- **2 billion** people with inadequate and unreliable electricity
- **3 billion** people using firewood, dung and charcoal for cooking

~80%

of people without access to electricity live in rural areas, limiting their opportunities to rise out of poverty.

The relationship between economic progress and energy consumption is clear. The human development index (HDI) chart (available at the QR code below) quantifies a country's level of human development, showing a strong correlation with energy use.



Achieving climate goals, while offering better lives to people around the world, **requires the invention of new technologies.**



All forms of energy will continue to play a critical role in advancing global climate objectives, while also providing billions of people with access to affordable energy. This is a complex problem that cannot be solved with the flip of a switch, and hydrocarbons will remain **critical for decades to come.**

Looking for more facts and the sources for the information in this brochure? Check out the link or QR code below.

kindermorgan.com/Energy-Realities



Kinder Morgan is actively evaluating opportunities to participate in the energy transition within its traditional businesses. Beyond our base business, our Energy Transition Ventures group is designed to identify and pursue emerging low-carbon solutions.

Interested in how Kinder Morgan is participating in the energy transition? Scan the QR code or click the link below.

kindermorgan.com/safety-environment/low-carbon-solutions



Energy Realities

Solving for climate change & human development starts with a clear understanding of the facts

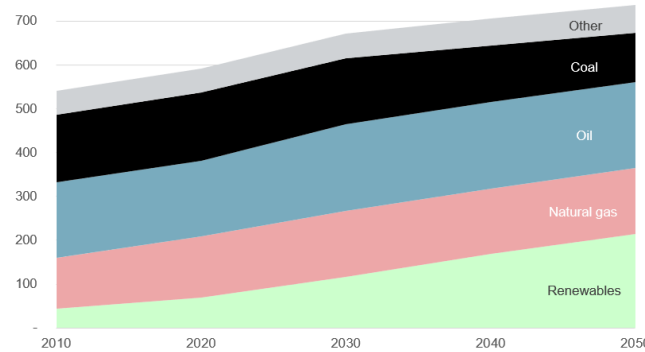
KINDER MORGAN

Natural Gas & Petroleum (Hydrocarbons): Abundant, Affordable & Reliable. A Critical Energy Source for Decades.

Challenges for a Low Carbon Future

The U.S. Energy Information Administration projects that while renewables will grow, hydrocarbons will still be the world's largest energy source in 2050.

GLOBAL TOTAL ENERGY DEMAND BY FUEL
Exajoules



Fast-growing developing countries will spur demand for oil for decades. The U.S. is the largest oil and natural gas producer in the world with a lower GHG emissions intensity than other large producers.

Hydrocarbons Enable Modern Life



Cement Plastics Steel Fertilizer

These are all products produced using natural gas, or natural gas and crude oil, as feedstocks and have no suitable alternatives.



Petroleum-derived plastics have worldwide applications and are in products we use every day.

Natural gas is essential to make nitrogen fertilizers. Without modern nitrogen fertilizers, we could only feed about half of today's world population.

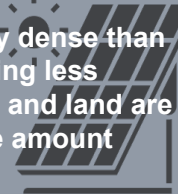


Since 2010, coal-to-gas switching by consumers and industry prevented ~500 million metric tons of CO₂ emissions

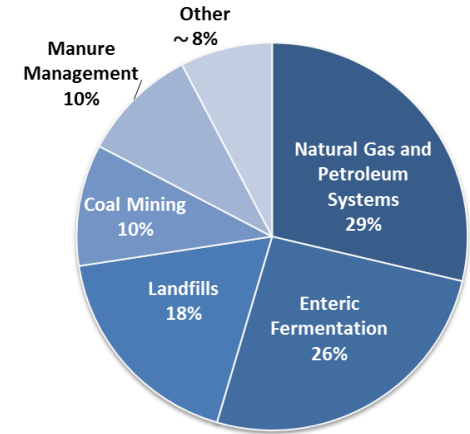
Natural gas emits roughly 50% of the greenhouse gas combustion emissions of coal when used to generate electricity.

Natural Gas

is one million times more energy dense than wind or solar energy, meaning less materials, mining, manufacturing and land are required to provide the same amount of energy.



Climate change is about more than energy. For example, methane emissions come from:



Hydrocarbons are needed to build the new infrastructure that supports renewable energy.

Energy transitions take a long time...



Coal grew from 5% of the world's energy supply to nearly 50% over **60 years**.



In 1900, natural gas accounted for 1% of the world's energy; it took **70 years** to reach 20%.



It took **80 years** from the discovery of nuclear energy to widespread commercialization of nuclear power.

In the developing world, affordability and reliability are paramount and will drive choices in energy sources.