



**Topic: Importance of gas in meeting  
world appetite for energy**

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# Appetite for energy



- Global energy demand will be about 30 percent higher in 2040 compared to 2010.
- The need for energy to make electricity will remain the single biggest driver of demand. By 2040, electricity generation will account for more than 40 percent of global energy consumption.
- Global demand for fuel for *personal* transportation will soon peak and then begin to decline.
- On the other hand, demand for *commercial* transportation is expected to rise in all regions of the world.
- Overall, global energy demand for transportation will rise by nearly 45 percent from 2010 to 2040.

“In the decades ahead, the world will need to expand energy supplies in a way that is safe, secure, affordable and environmentally responsible. The scale of the challenge is enormous and requires an integrated set of solutions and the pursuit of all economic options.”

Rex W. Tillerson, ExxonMobil Chairman and CEO

## The share of natural gas

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- Demand for natural gas will rise by more than 60 percent through 2040. An increasing share of global supply will come from unconventional sources such as those produced from shale formations.
- By 2040, natural gas will account for 30 percent of global electricity generation, compared to just over 20 percent today.
- However, the demand for natural gas for domestic use (like space heating) is expected to decline, mainly because of efficiency improvements and stronger competition from electric heating systems and heat networks.
- Natural gas will have a growing, but still small, share of global transportation fuels.

# Why use natural gas? (1)

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- Affordable
  - Although natural gas prices differ around the world, the spot prices don't follow the rise of the oil prices.
- Available
  - Natural gas reserves are abundant, and with the discovery of unconventional gas, growing by the day.
- Secure
  - Natural gas reserves are spread around the world, especially after the discovery of numerous unconventional supplies.

## Why use natural gas? (2)



- Flexible
  - Open-cycle and combined-cycle power plants are the most flexible electricity generation units, and most capable of absorbing fluctuations in renewable energy supply.
  - Also, the gas network offers cheap and easy storage possibilities without becoming unstable.
- Cleanest fossil fuel
  - Natural gas emits the lowest amounts of CO<sub>2</sub> and other pollutants.
  - And gas-fired power generation is the most efficient of all fossil fuels.

“The impact of increased energy consumption can be reduced through energy efficiency and a transition to a stronger reliance on cleaner sources of energy, including renewable energy and low-GHG [greenhouse gas] emitting fossil fuel technologies, such as a shift from coal to natural gas.”

“Energy for a Sustainable Future” UN Secretary General’s Advisory Group on Energy and Climate Change

# Natural gas and renewables

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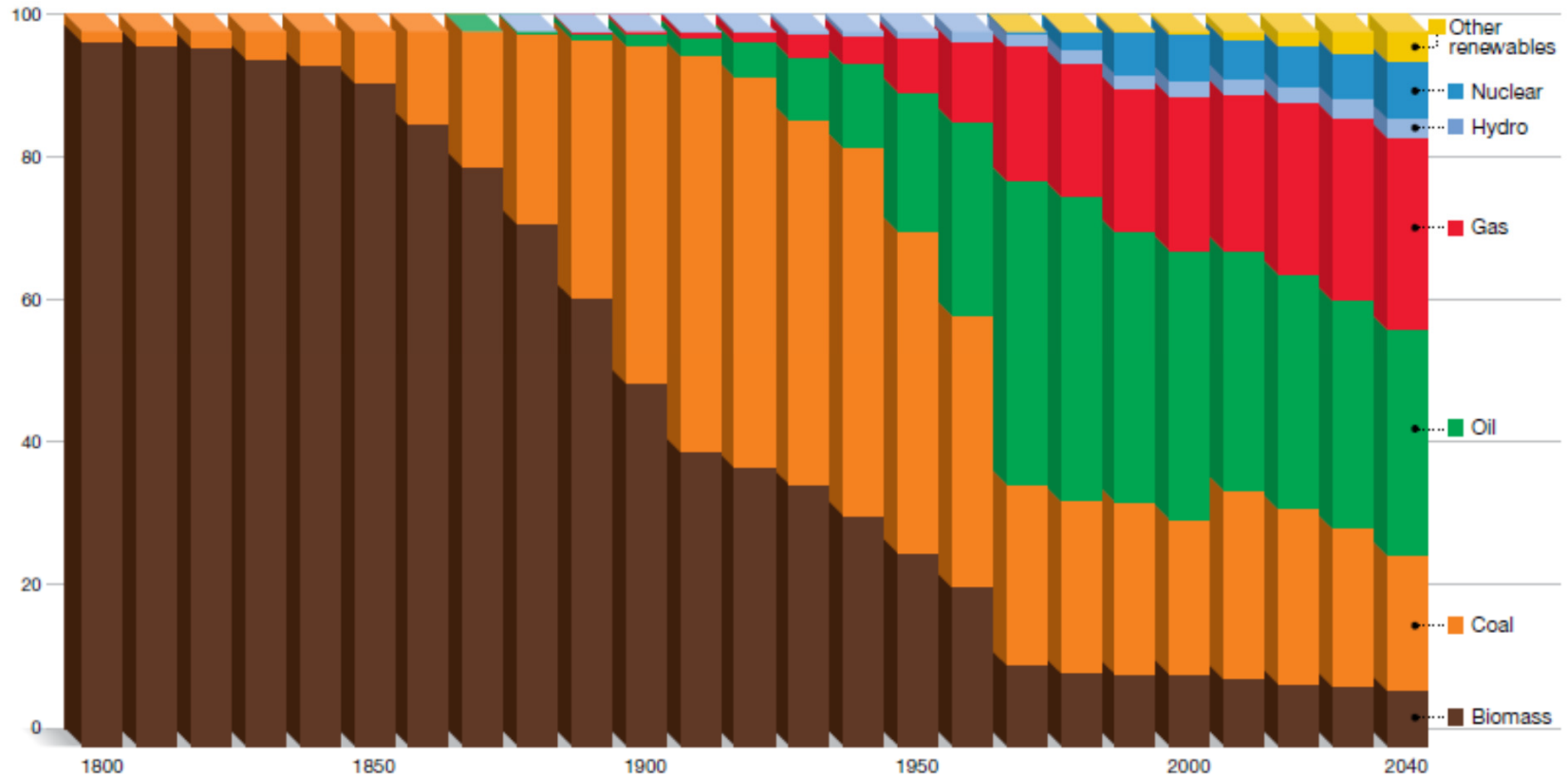


- Natural gas is the best partner for renewable energy supplies.
- Natural gas can fill the gaps in electricity supply renewable energy sources leave open.
- With modern combined-cycle technology, natural gas can also become a cost-effective supplier of base-load power.
- Natural gas can substantially lower the CO<sub>2</sub> emissions in transport, if the use is increased.

# Looking to the future

**Global fuel mix by decade**

Percent



Source: Smil, Energy Transitions (1800-1960)

## Discussion statements

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- Is the gas industry a sunrise or a sunset industry?
  - So is the industry going to prosper over the coming decades, or will it diminish?
- According to the IEA, it is now the 'golden age of gas', is this truly so or is it going to be the golden age of renewables?
- Is the gas industry still attractive enough for young professionals to work in?
  - If not, what should be improved?
- What kind of skills do you think is needed in the gas industry?
  - And how can you make a difference?