

Energy Industry



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International

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With limited natural resources, the Energy industry is successfully realising alternative fuels, and further means of accessing previously inaccessible resources. Shale gas could be the next energy revolution and strong growth is noted across renewable energy sources.

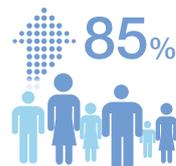
Historical development



It was not until the mid-19th century that we saw the mobilisation of energy on an industrial scale, with the harnessing of electricity and the construction of electric-power lines.



The International Energy Outlook 2013 (IEO2013) projects that world energy consumption will grow by 56% between 2010 and 2040.



85% of this increase occurs among the developing nations outside the OECD, driven by strong economic growth and expanding populations.

The industry today

The mix of energy use in the major applications varies depending on a combination of regional factors, such as the availability of energy resources, levels of economic development, and political, social, and demographic factors.

Major applications of energy use:



Electric power



Industrial



Buildings
(residential & commercial)

Major players in the industry



Worldwide proved oil reserves are about 1.5 trillion barrels and production averages roughly 89 million barrels a day.

The top three international oil companies (IOCs) by share of 2011 world production were:



Saudi Arabia has almost 20% of the world's proven oil reserves, is the largest producer and exporter, and maintains the world's largest oil production capacity.

The future for the industry

Concerns about energy security, the impact of fossil fuel emissions on the environment, and sustained high world oil prices are shifting focus to nuclear power and renewable energy.

The world's fastest-growing energy sources are:



renewable energy

+



nuclear power

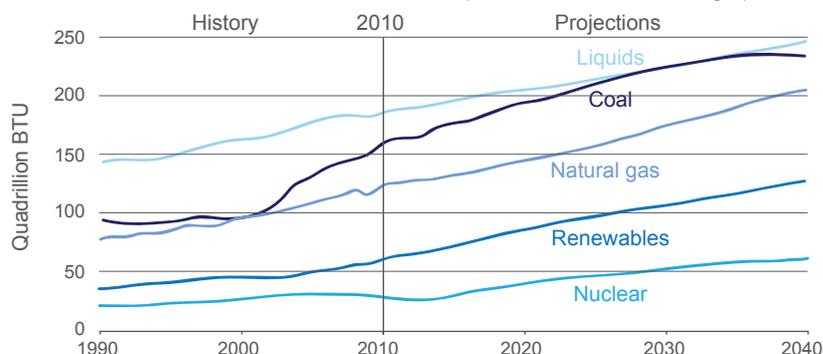
which are each increasing by 2.5% per year...



80%

...however, fossil fuels continue to supply almost 80% of world energy use.

Fossil fuels will continue to dominate but their share is predicted to fall as alternative sources such as Renewables and Nuclear become more prevalent as shown in the graph below:



Insight

Technological innovation is driving change in the industry, with increasing focus on nanotechnology, biotechnology, and sustainable chemistry solutions.

➤ **Renewables:** 22% of global electricity production in 2013 was from renewables, and according to the UN's Fifth IPCC Report the most realistic option for the future is to triple the use of renewable energy.

➤ **Shale gas:** China has an estimated 1,115 trillion cubic feet (TCF) of shale gas reserves; the US has 862 TCF and Europe 639 TCF.



➤ **Technological Innovation:** The energy marketplace is being transformed with new technology enabling energy companies to access resources, such as gas from shale and oil from oilsands, which were previously considered inaccessible.