



# Human activity and climate

## Fossil fuels and mining

Fossil fuels (coal, oil, natural gas) have been formed from the remains of plants and animals buried in the ground and decomposed over millions of years. Thus, they have become energy-rich resources, also called non-renewable energy sources. When burned, fossil fuels emit energy, but also emit greenhouse gases, dust and other substances into the air.



Mining can cause many environmental problems due to deforestation in large areas, which contributes to climate change. Methane and other greenhouse gases are released into the atmosphere during the extraction of oil and coal. It is estimated that up to 8% of methane emissions are generated as a result of coal and oil production.

## Electricity production

About 63 percent of the world's electricity is generated by burning fossil fuels (coal, oil, natural gas). Burning coal generates much more carbon dioxide than burning oil or natural gas. For example, in the United States, fossil fuel electricity is the source of 40% of all carbon dioxide emissions in the country. Reducing dependence on coal burning must be a leading component of any credible plan to prevent climate change.



People use electricity for many of their daily activities. So climate change processes depend to a large extent on how "clean" the sources of electricity for household needs are.

## Transport

The use of liquid fuels (petrol, diesel, kerosene) to power cars, trucks, trains, ships and airplanes is one of the leading causes of climate change.

In addition, the transport sector contributes significantly to air pollution. This not only increases greenhouse gas emissions, but also has a direct effect on human health, causing respiratory and heart problems.



People are increasingly traveling using energy-intensive modes of transport such as airplanes and cars, instead of trains, buses, ferries and especially bicycles, which consume less energy. In an increasingly globalized world, the transport of raw materials, products and goods is growing – by trains, ships and trucks.

Today, about 20 percent of the world's energy goes to transport.

About 74% of transport-related carbon emissions are due to road transport and another 12% to air transport. More than 600 million cars are on the road, and their number is projected to rise to 2 billion by 2050.

## Industry

About half of the world's energy is used in economic sectors: industry, agriculture, mining and construction. Energy-intensive industries (and therefore sources of large amounts of greenhouse gases) include those working with chemicals, metals (such as iron and aluminum), minerals, paper, food processing, and coal mining, oil and natural gas.



## Agriculture

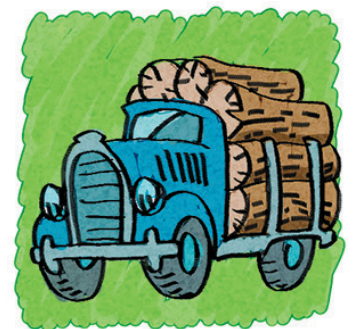
Agriculture is the source of about 10% of total EU greenhouse gas emissions. Activities related to agriculture and animal husbandry are the reason for the release of significant amounts of methane and nitrous oxide, two powerful greenhouse gases. Methane is produced by intestinal fermentation during digestion and is released by belching animals. Methane is also separated from stored manure and landfills for organic waste. Nitric oxide emissions are an indirect product released by the use of organic and mineral nitrogen fertilizers. Deforestation in order to develop new agricultural land is another serious factor causing climate change.



## Trade sector

The link between trade and greenhouse gas emissions is mainly due to the need to use transport. International trade requires goods to be transported from the country of production to the country of consumption.

Petroleum products provide 95% of the total energy used by global transport, making it a significant source of greenhouse gas emissions.



## Food production

One of the main concerns of people is the provision of food. However, before reaching the table, the food is produced, stored, processed, packaged, transported, prepared and served. At each stage, food security uses energy, which is the reason for the release of greenhouse gases into the atmosphere. Given the key importance of food in people's lives, efforts to reduce greenhouse gas emissions in food production remain a major challenge.



## Deforestation

Forests play an important role in combating climate change, as they absorb and store huge amounts of carbon by absorbing (in their trunks, branches, leaves and roots) carbon dioxide from the atmosphere in a process called photosynthesis. It is said that a healthy tree stores up to 30 tons of carbon. Forests also play a huge role in climate regulation in the areas where they grow. They absorb water from the soil and then release it back into the atmosphere as water vapor through a process called transpiration. The water then combines with water vapor from other sources in the atmosphere and eventually falls back to Earth as precipitation. This helps maintain lower temperatures. Also, the shade of the trees cools the surrounding air and the earth, which ultimately helps to cool the temperature of the planet as a whole.



Despite all these benefits, for centuries forests have been cut down, damaged or burned by humans for a number of reasons, including agricultural and livestock areas, roads and cities, mining and the provision of firewood. As a result, deforestation not only causes loss of biodiversity and habitats, but also reduces the process of photosynthesis, which "captures and processes" carbon dioxide in the atmosphere.

## Households

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