Renewables crucial for EU decarbonisation, but technology choices matter for air quality

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Air pollution Climate change mitigation Energy

Growth in renewable energy use since 2005 has been instrumental in reducing greenhouse gas emissions across the European Union (EU), according to a briefing published today by the European Environment Agency (EEA). Many renewables, including those sourced from wind, solar geothermal energy or heat pumps, are also effective in cutting air pollutant emissions but the results are mixed when biomass replaces fossil fuel burning, especially in households.

The EEA briefing ‘Renewable energy in Europe: key for climate objectives, but air pollution needs attention’ looks at the deployment of renewable energy in the EU since 2005 and its contribution to EU’s climate and energy goals. It also analyses the effect of renewables growth on air pollutant emissions. The EEA briefing is based on the detailed analysis ‘Renewable energy in Europe – 2019. Recent growth and knock-on effects’, prepared by the European Topic Centre on Climate change Mitigation and Energy.

The EEA briefing shows that the share of renewable energy in final energy consumption has increased continuously both at the EU level and in most Member States. According to EEA’s preliminary estimates, the share of energy from renewable sources reached 18.0 % of gross final EU energy use in 2018. About half of all renewable energy is currently used for heating purposes. The EU target of a 20 % share of renewable energy by 2020 is now within reach.

The continuous growth in renewables has also relieved much of the need to burn fossil fuels to meet energy demand. Without the progress achieved since 2005, the EU’s greenhouse gas emissions would have been 11 % higher in 2018 and the EU would not be in a position to meet its 20 % reduction target by 2020.

The increasing share of renewables has also cut the emissions of some air pollutants, mainly sulphur dioxide and nitrogen oxides. However, the EEA briefing shows that emissions of particulate matter and volatile organic compounds have increased, especially due to more solid biomass being burned inefficiently for domestic heating. Burning biomass has been a key driver for the growth in renewable energy use, especially in the heating sector, but also in the electricity sector (where wind and solar photovoltaic electricity grew faster).

The EEA briefing highlights that to maximise the climate and health benefits of the energy transition, policy makers ought to assess carefully the interplay between renewable energy sources and with the wider energy mix, and pay attention to potential impacts from biomass burning.