Upcoming climate hazards to hit hard Europe's industry, transport and energy infrastructure

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Potential damage from climate hazards to critical infrastructures in the energy, transport, industrial and social sector could triple by the 2020s, multiply six-fold by mid-century, and surpass 10 times today's total of 3.4 billion €/year by the end of the 21st century, according to a new JRC study.

Projections indicate that economic losses will be highest for the industry, transport and energy sectors, as they are to multiply economic damage to the infrastructures by 15. The increasing frequency of multiple extreme weather events (where a current 100-year heat wave or 20-year flood may occur every one or two years under the expected future climate conditions) sends a strong signal that the current design, construction, operation and maintenance standards of critical infrastructures in these sectors should be adapted.

Climate change-induced damages to critical infrastructures are expected to strongly rise in Europe. The study evaluated how climate change can affect the current stock of critical infrastructures in the four sectors in the EU28, Switzerland, Norway and Iceland. On the basis of scientific models, the authors analysed the frequency and intensity of seven specific climate hazards, including heat and cold waves, droughts, wild fires, inland and coastal flooding, as well as windstorms.

The resulting projections were combined with detailed topographic

information on the location of infrastructures, their vulnerability to the different hazards, and observed damages from past disasters in order to extrapolate losses from expected future climate conditions. The researchers also identified southern European countries as those most likely to be affected throughout the 21st century. These regions may have to make substantial investments to prepare their critical infrastructures against possible hazards under future climate conditions.

As the impact of climate change goes far beyond that of the seven climate hazards to critical infrastructures considered, the potential damages presented in this study will probably reflect only a fraction of the overall climate change impact on European economies and societies.

Background

The Paris Agreement of December 2015 has put adaptation on par with mitigation. One of the three priorities of the EU Adaptation Strategy is to promote better informed decision-making by improving knowledge on climate change impacts. This is indispensable for planning suitable adaptation measures to safeguard and secure core functions of our societies. The study was carried out in support of these objectives.

Provided by CORDIS

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