

Press release

Freiburg/Berlin, 1 September 2020

Nuclear energy – not a zero-risk technology?

The Joint Research Centre (JRC) report, produced on behalf of the European Commission to assess whether nuclear energy can cause “significant harm” to human health and the environment, fails to consider in sufficient depth key risks such as the threat of catastrophic accidents and the proliferation of nuclear weapons. The JRC’s conclusion that nuclear energy does not cause significant harm and may therefore be promoted by the EU as a “sustainable” technology in tackling climate change does not stand up to scrutiny, as the Oeko-Institut’s analysis shows. Judging solely by the risk of severe accidents, it is self-evident that “significant harm” cannot be ruled out and that nuclear energy therefore cannot be classed as “sustainable”.

This is the conclusion drawn in an Oeko-Institut analysis on behalf of the Heinrich-Böll-Stiftung European Union, which reviewed the key arguments presented in the JRC report. In a policy paper, the researchers assessed the risks associated with severe accidents and nuclear weapons proliferation; a third aspect – nuclear waste disposal – was analysed by Ben Wealer from TU Berlin.

Impacts of major accidents not adequately considered

The JRC’s assessment of the potential dangers emanating from nuclear power plants after major accidents is based on inadequate data and analyses. For example, very little scientific literature was reviewed and very few indicators were used to assess risk. Although the report looked at severe accident fatality rates and maximum consequences, it failed to apply other key indicators, such as the number of persons evacuated or relocated, land contamination, which can persist for decades or even centuries, and the economic impacts of a severe accident.

To sum up: “The JRC’s discussion of these important issues is not an adequate basis on which to make a robust assessment of the risk of a major accident,” says Dr Christoph Pistner, Head of the Nuclear Engineering and Facility Safety Division at the Oeko-Institut. “As we have seen in the recent past, major accidents can occur at nuclear power plants, and they can have significant impacts on human health and the environment.”

Risks of nuclear weapons proliferation not considered

Nuclear technology can be used both for peaceful energy generation and for military purposes – in other words, to manufacture nuclear weapons. In practice, however, the JRC report largely disregards the issue of proliferation, i.e. the spread of nuclear weapons, technology and fissionable material. It sidesteps the complex history of proliferation, referring instead to existing control regimes under international treaties, and fails to address the real and ongoing risks posed by the military use of civilian nuclear technology.

Press inquiries

Phone: +49 30 405085-333

Email: presse@oeko.de

Public Relations & Communications

Mandy Schossig

Borkumstrasse 2

D-13189 Berlin / Germany

Phone: +49 30 405085-334

Email: m.schossig@oeko.de

“Any deployment of nuclear weapons would have catastrophic impacts on human health and the environment,” warns Dr Matthias Englert, a nuclear expert at the Oeko-Institut und co-author of the study. “A discussion of the dangers posed by nuclear energy that fails to address the issue of proliferation is therefore incomplete and does not allow viable conclusions to be drawn for further policy review.”

The European Commission’s Taxonomy Regulation

The European Union’s Taxonomy Regulation aims to channel investment into a sustainable, low-carbon economy. To that end, the European Commission has defined criteria for environmentally sustainable technologies that may qualify for EU funding. Examples are technologies that mitigate climate change or support adaptation, such as renewable energies.

Does nuclear energy satisfy these sustainability criteria? The Technical Expert Group (TEG) established by the Commission was initially unable to reach a definite conclusion. It therefore recommended that unresolved questions be answered by the Commission’s science and knowledge service, the Joint Research Centre, which presented its final report – discussed here – in March 2021.

[Policy Paper „Sustainability at risk: A critical analysis of the EU Joint Research technical assessment of nuclear energy with respect to the "do no significant harm" criteria of the EU Taxonomy Regulation“ der Heinrich-Böll-Stiftung Europäische Union auf Basis der Analysen von Öko-Institut und DIW/TU Berlin](#)

[“Nuclear Power and the „do no significant harm“ criteria of the EU Taxonomy“: Working Paper by the Oeko-Institut \(long version\)](#)

Contacts at the Oeko-Institut

Dr Christoph Pistner
 Head
 Nuclear Engineering & Facility Safety Division
 Öko-Institut e.V., Darmstadt Office
 Phone: +49 6151 8191-109
 Email: c.pistner@oeko.de

Dr Matthias Englert
 Senior Researcher
 Nuclear Engineering & Facility Safety Division
 Öko-Institut e.V., Darmstadt Office
 Phone: +49 6151 8191-157
 Email: m.englert@oeko.de

The Oeko-Institut is one of Europe’s leading independent research and consultancy institutions working for a sustainable future. Founded in 1977, it develops principles and strategies for realising the vision of sustainable development at global, national and local level. The institute has offices in three cities in Germany: Freiburg, Darmstadt and Berlin.

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 Email: presse@oeko.de

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 Borkumstrasse 2
 D-13189 Berlin / Germany

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 Email: m.schossig@oeko.de
