

Oei, Pao-Yu; Wittenberg, Erich

Article

"Nuclear power plants are more expansive than other technologies when incorporating all connected costs": Eight questions for Pao-Yu Oei

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Dr. Pao-Yu Oei, guest researcher at DIW Berlin and post-doc in the Workgroup for Infrastructure Policy (WIP) at Technische Universität Berlin

EIGHT QUESTIONS FOR PAO-YU OEI

»Nuclear power plants are more expansive than other technologies when incorporating all connected costs«

1. Mr. Oei, Germany has decided to phase out nuclear energy. What do the plans for nuclear power in other European countries look like? Countries have very different plans when it comes to nuclear power. Some countries, such as Germany, Italy, Austria and recently, Switzerland, have decided to phase out their nuclear power programs. Others—for example, Great Britain—have decided to implement additional new construction projects in the coming years.
2. How many new nuclear power plants are planned for Europe in the next decade? In its current reference scenario, the European Commission is planning for the addition of over 100 gigawatts (GW) in the coming years: 50 GW from new plants and 86 GW in the form of license renewals. It is hard to say how many power plants that will translate into, but one gigawatt is approximately equal to one nuclear power plant. Accordingly, you can infer that new plants, expansions or license renewals are in the planning phase at over 100 locations—even if we doubt that so many new ones could actually be built.
3. Would that mean an increase or decrease in capacity? The basic tendency is a drop. However, some countries—especially in Eastern Europe—are thinking about increasing their capacity.
4. Are these plans understandable from an economic viewpoint? No, they are not. If you factor all the costs into an economic analysis, including dismantling the plant and the final disposal of waste, nuclear power plants are many times more expensive than other conventional power plants and significantly more expensive than renewable energy production.
5. How competitive is nuclear power in comparison to fossil fuel plants? It is clearly more expensive to operate a nuclear power plant than a coal- or gas-fired plant. We also see this in Western Europe, where nuclear power plants were closed earlier than originally intended because it no longer made sense economically speaking for operators to keep the plants on the grid.
6. How do you explain the general acceptance of nuclear power in Great Britain? The feed-in tariffs of over 100 euro per megawatt-hour promised to the nuclear power industry make it obvious that it is much more expensive to build new nuclear power plants than new renewable energy production sites. Therefore, the acceptance does not rest on economic interest alone; it is also politically motivated. When looking at the political issues, the military must be included alongside the civil use of nuclear power.
7. What does the future hold for the “transition énergétique” in France? The “transition énergétique” is an about-face in France’s energy policy: the country is considering a reduction in nuclear power’s share for the first time. It demonstrates France’s recognition that the trajectory of its former nuclear power policy is uneconomical. And our model results show that France, too, can achieve 100% decarbonization by 2050 without nuclear power.
8. Both France and the UK are nuclear powers but appear to have varying political assessments of this issue. If the United Kingdom decided against the new Hinkley Point C construction project, the last nuclear power plant in Great Britain would exit the grid in the 2030s and the country would no longer use nuclear technology for civil purposes. With its “transition énergétique,” France has decided for the first time to reduce nuclear power’s share. However, the French have not resolved to completely phase out nuclear power. Consequently, they will continue to have civil nuclear capacity on the grid.

Interview by Erich Wittenberg



DIW Berlin – Deutsches Institut
für Wirtschaftsforschung e. V.
Mohrenstraße 58, 10117 Berlin
T +49 30 897 89 -0
F +49 30 897 89 -200

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