An introduction to two conversations on the **impact of nuclear power**

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Nuclear incidents, as well as articles in the press, influence and change the way in which nuclear power is perceived by the public. These perceptions mirror the contradictory nature of the views held by scientists, politicians and any other sector of society. This polarization of views is a defining feature of the nuclear debate. However, the arguments of both opponents and supporters of nuclear power merit careful consideration and critical appraisal.

In order to assess the environmental impact of civil nuclear power, as with any large-scale, complex technological process, all the many steps that make up the industry must be taken into account. The potential risks differ, depending on the region, and, despite preventive measures taken during the design and operation of installations there is still the chance of an accident, whether caused by a natural event, human error or malevolence. In the case of nuclear power, the aspects related to energy production range from the conditions under which the fuel is mined to the fate of spent fuel, and there are a number of key issues at the heart of the debate, for example the risk of irradiation, contamination, chemical pollution or explosion.

With this in mind, we wanted to question scientists both for and against civil nuclear power about its impact on health and the environment under normal operating conditions[(a)]. To do this, we asked Claude Stéphan, a nuclear physicist who has written extensively on the civil nuclear industry and who is more of a proponent, and Pierre Barbey, a biologist from the University of Caen, Director of the Implementation and Management of Radioelements (IMOGERE) facility, who has been critical of reactor emissions. Likewise, we asked Jean-Christophe Gariel of the Institute for Radiological Protection and Nuclear Safety (IRSN) and legal expert Sophia Majnoni d'Intignano, formerly very active within Greenpeace, to comment on the prevention and management of a possible accident[(b)].

In each case, the authors presented a number of complementary arguments. We offer you a selection of them, which although arbitrary, is as comprehensive as possible. The two articles that follow are our responsibility and not those of the people interviewed. They illustrate the debate that is ongoing within the scientific community and in society as a whole, a debate that incorporates a wide range of fields such as physics, nuclear engineering, economics and health, and also includes sociological and moral considerations.

To illustrate this wide range of topics in more detail, these two discussions are followed by other more specialized texts dealing with the role of organizations and subcontractors in the nuclear industry, as well as the operating costs of the industry. ▮

a. See the conversation on page 19 with C. Stéphan and P. Barbey.

b. See the conversation on page 22 with J.-C. Gariel and S. Majnoni d'Intignano.