

# Risks and side effects of nuclear energy

## Why nuclear energy is no solution to the climate catastrophe

The nuclear industry is trying yet again to advertise nuclear power as a form of “clean energy” that can allegedly save the climate. The facts, however, tell a different story. Both fossil and nuclear energy pose environmental and health risks: coal and gas pollute the environment and add to global warming, nuclear energy has the inherent risk of a nuclear meltdown and the release of radioactivity. Both sources of energy exploit limited natural resources, cause environmental destruction and severely violate human rights.

**The German affiliate of the International Physicians for the Prevention of Nuclear War (IPPNW) therefore advocates a rapid phase-out of both fossil and nuclear energy generation.**

### IPPNW doctors warn:

## Nuclear energy ...

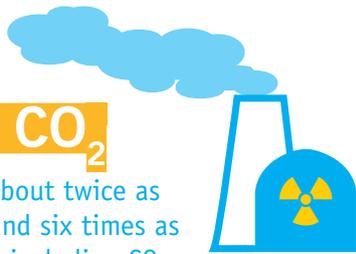


### 2. causes cancer

A study by the German Children’s Cancer Registry on the effects of nuclear energy shows that the nearer a child lives to a nuclear power plant, the greater its risk of developing cancer. Workers in nuclear power plants and people living in areas where uranium is mined also face health risks, depending on the doses they are exposed to.

### 4. produces CO<sub>2</sub>

Nuclear energy produces about twice as much CO<sub>2</sub> as solar power and six times as much as wind power—not including CO<sub>2</sub> that will be produced by nuclear waste in the coming millennia.



### 6. is irrelevant in terms of greenhouse gases

Even if 900 new nuclear power plants could be built in the near future, the use of nuclear energy would reduce global greenhouse gas emissions by less than 5%.



### 1. is dangerous



In the last 32 years, there have been three major nuclear disasters: Three Mile Island (USA), Chernobyl (Ukraine) and Fukushima (Japan). That means there has been one major disaster every 10 to 11 years.

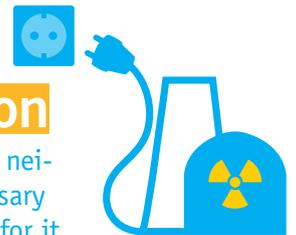
### 3. is expensive



In terms of the price per installed kilowatt, nuclear energy is currently the most expensive type of energy—even before the costs of uranium mining and nuclear waste storage are factored in.

### 5. is not a global solution

Most countries in the world have neither nuclear power nor the necessary infrastructure or financial means for it. Renewable energy, on the other hand, is achievable for all in every region of the world.



### 7. powers the bomb

If there was no civil nuclear energy, nuclear weapons programmes would be prohibitively expensive.



# Risks and side effects of nuclear energy

## 1. Nuclear energy is dangerous

In the last 32 years, there have been three major nuclear disasters: Three Mile Island in 1979, Chernobyl in 1986 and Fukushima in 2011—one major nuclear accident every 10 to 11 years. France recently had to shut down about one third of its 58 nuclear reactors for safety reasons. Many other nuclear reactors in the EU have massive safety problems, such as those in Tihange and Doel in Belgium.



## 2. Nuclear energy causes cancer

The study on childhood cancer in the vicinity of nuclear power plants by the German Children's Cancer Registry examined data over a period of 23 years on more than 6,000 children under the age of five, who were living in the vicinity of German nuclear power plants. The study showed a significant increase in the risk of cancer in the proximity of all nuclear power plants. An increase in health effects due to radioactive exposure was also found among staff at nuclear power plants. The INWORKS study showed increased leukemia rates in a cohort of 600,000 nuclear workers in 2015. Increased cancer rates were also found among workers in uranium mines, their families and the population living in uranium mining areas.



## 3. Nuclear energy is expensive

The costs of nuclear energy are artificially kept to a minimum. Nuclear power has always been highly subsidized by governments. At the same time, the costs of uranium mining and production are reduced by lowering safety standards and allowing serious violations of the human rights of indigenous communities, such as the Navajo and Sioux in the US, the Aborigines in Australia, the Adivasis in India or tribes living in the uranium mining regions of Namibia, Gabon or Niger. The operating costs of nuclear power plants are also artificially reduced by relieving the nuclear industry of its liability: power plant operators are not adequately insured against major nuclear accidents. The decommissioning of nuclear facilities and the securing and storage of nuclear waste will also generate incalculable costs in the coming millennia. Yet, the nuclear industry will not be made to pay for these expenses. Instead, taxpayers will have to deal with the legacy of nuclear energy for many generations to come.



## 4. Nuclear energy produces CO<sub>2</sub>

According to the IPCC Report of 2014, nuclear energy produces about the same amount of CO<sub>2</sub> emissions as energy from renewable sources. Many scientists believe this amount is greater, as several factors have not been taken into account in this calculation. According to a 2008 study by the University of Singapore, nuclear power releases six times as much CO<sub>2</sub> as wind power. This does not include the estimated 55-220% increase in greenhouse gas emissions



from nuclear power caused by more CO<sub>2</sub>-intensive mining processes that will be necessary in the future to extract highly concentrated uranium. The CO<sub>2</sub> produced by nuclear waste storage in the coming millennia is also missing in this calculation.

## 5. Nuclear energy is not a global solution

Nuclear energy generation is almost exclusively limited to the nuclear weapons states and their allies. The US and France combined generate more than half of the world's nuclear power. 85% of all UN member states have neither nuclear power nor the necessary infrastructure or financial resources for it. In contrast, renewable energy can be realized all over the world: From a megacity like Seoul, which decided against a new nuclear power plant in 2011, to small islands in Indonesia, where villages run solar power projects. Many countries have banned nuclear energy or are in the process of phasing it out.



## 6. Nuclear energy is irrelevant in terms of greenhouse gases

Nuclear energy accounts for only 5% of global energy production. Around 25% of greenhouse gases are produced through electricity generation. At present, the use nuclear energy can therefore only reduce greenhouse gas emissions by about 1.25%. Even if nuclear power production were to triple, for instance if 900 new nuclear power stations were to be built, the impact of nuclear energy on the reduction of greenhouse gases would be negligible. It is often claimed that in the future it will be possible to construct nuclear reactors that are safer, cleaner and cheaper. But this new generation of nuclear reactors has been promised time and time again for decades, although billions in subsidies have been sunk in dead-end research projects—money that is could have been spent on truly sustainable forms of energy production and storage technologies.



## 7. Nuclear power powers the bomb

The civil and military aspects of nuclear power cannot be separated—both are part of the same nuclear chain. In many countries, civilian nuclear programmes are under the control of the military and the central government. Nuclear research and development as well as the training of nuclear experts has always overlapped. For instance, the construction of the new Hinkley Point C nuclear power station in the UK is actually a hidden subsidy for the country's nuclear weapons programme. States like India, Pakistan or Israel used civilian nuclear programmes to hide their nuclear weapons programmes.

