



## Climate Change and why Nuclear Power Can't Fix it

*The pursuit of nuclear energy as a climate change solution inhibits the necessary rapid development of solutions that are effective, available, less expensive, safer and more environmentally acceptable.*

### **Nuclear power does have a carbon footprint**

Life-cycle carbon emissions from the nuclear fuel chain puts nuclear power as the third highest carbon emitter after scrubbed coal-fired plants and natural gas. If reactors begin using low-grade uranium ore once high-grade uranium deposits are depleted, this will increase nuclear power's carbon emissions.

### **Nuclear power plants take too long to build**

The global average construction time for new nuclear plants is **10 years**. The time between the start of planning to actual operation can take up to **20 years**, compared to **2-5 years** for wind and solar.

### **We cannot build enough nuclear plants in time to make a difference**

We would need to build **more than two new reactors every month** until 2050 to make even a minor reduction in carbon emissions, a highly improbable scenario.

### **Building new nuclear plants won't replace coal plants**

Given lifespan and closure rates, even if we built 80 new reactors in the next 10 years and 200 more in the following 10, we would only have replaced the present nuclear capacity and not one coal plant.

### **Nuclear energy use impedes renewable energy development**

Nuclear power is in a worldwide economic decline, leading plant owners to demand government subsidies to keep their reactors operational and to get funding for proposed new nuclear plants.

### **The baseload myth**

Nuclear power plants can't safely meet fluctuating power demand. They run at high capacity even at night when energy demand is much lower. In fact, nuclear energy has the lowest flexibility and the worst response speed compared to all other power technologies.

### **Nuclear power plants consume too much water**

In a warming world, water scarcity will become a crisis. **A once-through cooling nuclear plant draws in as much as a million gallons of water a minute**, discharged as hotter water. Reactors using cooling towers draw in water and then evaporate it as steam, thereby consuming and depleting water supplies.

### **Nuclear power plants function inefficiently or close during droughts and heatwaves**

Under drought and heatwave conditions, nuclear power plants must power down to remain efficient or shut down for safety reasons. Nuclear plants are not there when electricity is needed most.

### **Coastal nuclear plants could end up under water**

Many nuclear plants are located along coastlines. **As seas rise, coastal nuclear power plants in at-risk regions will eventually become submerged, making them inoperable**. Their radioactive waste inventories, if not moved in time, would then leak into the oceans.

### **Closing nuclear reactors does not mean an increase in fossil fuel use**

Closed nuclear plants are not necessarily replaced by fossil fuel plants. With renewable energy prices falling, wind and solar are stepping in to fill the void, even beating out natural gas.

### **So-called advanced reactors are decades away and won't replace current designs**

Generation four reactors are decades away from a deployed reality, far too late for the climate crisis. Small modular reactors would be needed in huge numbers to achieve any greenhouse gas reductions, making them an uneconomic business proposition and wasting time and money better spent on renewable energy development and implementation.