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## NUCLEAR ENERGY AS THE CLEANEST SOURCE

Over the past 20 years, the volume of clean energy has doubled. This is energy obtained from environmentally friendly sources – hydropower, nuclear, solar, wind, geothermal, tidal, biomass energy. However, its share in the total volume of produced energy remained the same and even decreased slightly – from 36% in 1999 to 34% in 2020. The fact is that the fossil fuel industry is growing faster than the clean energy industry. Many poor countries still use wood, dung and coal as their main fuel.

It is difficult to make nuclear energy even safer than it is now. According to a study by one of the largest medical journals, the Lancet, nuclear energy is the safest of all other sources of energy. It is safer than wind turbines and solar panels.

Wind. You put up a farm of wind turbines – and here it is, pure energy! True, but for this it is necessary to allocate an open space for the farm, where the winds constantly blow. It is okay, if you have a good place near the city (or maybe, you were going to set up a park or a plantation there). However, what if there is no such place? Can you provide a reliable supply of energy? Of course not. No wind, no energy. The power of the windmill is proportional to the third power of the wind speed – the wind speed has dropped by half, the power of the windmill by eight.

The sun. Looks good too. You put on panels – you get energy. This is, of course, if the weather is good in your area. But again, let's determine if you can provide a reliable supply of energy. Not unless you are in Atacama. Unfavorable weather conditions leave the city without electricity.

For a person living in a large city like London, Berlin or New York, the risk of death increases by 2.8% from air pollution alone. For those who live next to smokers – by 1.7%. For the liquidators of the Chernobyl accident, who received a radiation dose of 250 millisieverts, it increased by 1%.

By comparison, fuel energy creates uncontrolled waste in the form of greenhouse gas emissions – 7 million people die from them a year. Therefore, the reduction of fuel energy in favor of nuclear energy has already saved the lives of 1.8 million people.

What about waste? Waste from nuclear energy is scarce. If you take nuclear waste from the entire history of the United States and fill a football stadium with it, its height will be only 6 meters. Waste is stored in special insulated containers and is constantly monitored. In addition, developments are now underway to use nuclear waste as fuel.

What about nuclear weapons? There are no examples of how countries with a nuclear industry suddenly began to develop nuclear weapons. In fact, the opposite is happening. It turns out that the only known way to get rid of a large number of nuclear weapons is to use plutonium from warheads as fuel for nuclear power plants.

What do we have? All alternative sources fundamentally suffer from the following problems:

(a) they do not guarantee the required power; many do not guarantee at least some minimum power at all;

(b) they require the transfer of vast suitable areas for a farm / reservoir; however, there is usually no choice where to place the farm;

(c) they scale poorly or do not scale at all.

What does nuclear power provide us with?

(a) an absolutely predictable and reliable source of energy – how much MW you need, so much is put into the project;

(b) a highly scalable power source; there is not enough power – build another power unit. At the same time, there is usually no need to build a new farm – a new power unit is being built within the framework of the existing NPP complex and does not consume additional space.

Nuclear energy is a growing industry that offers efficient energy options to businesses and families across the world. With continuous efforts to advance technologies, nuclear energy will become more safer and efficient than it ever has before.