Argumentative Essay About Nuclear Power

The subject of nuclear power and its usage has become a matter of contention in recent years. Ever since the use of the nuclear bomb in World War II, critics have lamented the creation of nuclear technology and sighted its many disadvantages. While the fact that nuclear technology has its disadvantages cannot be denied, the same can be said about all forms of technology, particularly those related to the energy sector. However, at the same time, while these critics consider the disadvantages of nuclear energy, they have failed to have a look at its advantages which are numerous. Not only that but it must be noted that the advantages of nuclear energy have already helped mankind in many ways. Some advantages of nuclear energy include the production of carbon-free electricity, its small land footprint, high output of power, and the fact that it is a reliable source of energy.

The first advantage of nuclear power is that it enables one to produce carbon-free energy. This is a factor that is most important in these times, particularly as the planet is facing a catastrophe in the form of climate change. The traditional methods of producing energy include fossil fuel generation which includes pumping huge amounts of carbon dioxide and many greenhouse gases into the air. Beckrich writes that the use of carbon-based technology has ensured an increase in greenhouse gasses that have led to the depletion of the ozone layer (Beckrich). This depletion of the ozone layer is highly dangerous for the planet as it is a direct contributing factor to global warming. As the planet warms up, natural disasters such as tornadoes, wildfires, and tsunamis continue to increase. Heatwaves cause areas in the world to become unlivable and this problem is only growing throughout the years. If humans do not deal with this issue as soon as possible then it can lead to further disasters and a massive amount of

destruction on the planet. Thus, here, it is obvious that carbon-free technology is required to save the planet and this is where nuclear energy comes in. The production of nuclear energy does not pollute the air, although it does create the problem of nuclear waste that is an entirely separate issue unlinked with climate change or global warming.

The second advantage is that it leaves a very small land footprint. In this lure, the issue of having a huge carbon footprint has already been discussed but the problem of having a huge land footprint remains. This land footprint refers to the physical space occupied by energy facilities. While it is true that resources such as natural gas are so readily available that interest in nuclear energy is dropping (Carless), it is also true that these carbon-based reservoirs take up plenty of physical space which gets hard to manage. Even other clean energy sources such as solar panels or windmills require plenty of physical space. A nuclear plant and a wind farm could produce the same amount of electricity but a wind farm will take up acres of open space that should allow the wind turbines to move freely. While this sort of setup may be feasible in huge countries such as the United States, it is most certainly not appropriate for smaller countries, particularly the countries that are overpopulated. The only disadvantage of nuclear facilities is that their radioactivity can negatively impact the surrounding population but Liu's research on the subject makes it clear that this impact is temporary and any contaminated items such as livestock can be consumed with causing harm (Liu et al.). Thus, in this case, the small land footprint is a serious advantage.

Thirdly, the issue of high power outages must also be considered here. Not only is carbon-based technology harmful to the planet, but it also cannot produce the high levels of energy nuclear power can. This clearly indicates that nuclear power plants have the potential to become a huge source of baseload electricity which can sustain more people than ever before.

This means that traditional energy sources cannot sustain as many households, offices, or factories that can be sustained by nuclear power (Liu et al.). In this case, it must be noted that the demand for baseload is only increasing with the increasing population of the country. This situation is even more critical in the developing world where population surges are huge but many households do not have electricity. As this population increases, so does the minimum level of energy demand over a certain period of time. This demand is known as baseload and as this demand increases, energy plants are required to produce more and more electricity. However, traditional nuclear energy plants cannot give the high output that is given by a nuclear power plant. To be sure, there are dangers associated with these plants, particularly if they are not maintained properly ("Nuclear Energy"), but it is only feasible that nuclear energy is promoted over fossil fuels as long as it is handled carefully.

Lastly, it must be noted nuclear power is a highly reliable source of energy. The energy that is reliant on fossil fuels is not reliable as fossil fuels have taken millions of years to form and will soon run out given the pace at which they are being utilized (Ritch). However, the same cannot be said about the isotopes of uranium from which nuclear energy is generated. The first factor that must be considered here is the constant associability of nuclear energy as compared to fossil fuels. This is because of the fact that nuclear power plants produce energy via fission which produces heat and is used to turn turbines, and all of this is done via uranium. It must be noted that there has never been a shortage of uranium and it does not seem that there will be a shortage in the future (Ritch). The second factor that must be considered here is the constant stability of extracting energy from uranium sources. Thus, this type of energy can be far more reliable than carbon-based energy which requires a constant struggle to extract. The only concern, in this case, is that of nuclear safety as outlined in the article *Nuclear Safety* which

mentions incidents such as the infamous nuclear meltdown of Chernobyl. Nonetheless, it has also been noted that precautions can easily be taken to prevent such a reaction from occurring again.

Conclusively, it can be said that while there are disadvantages to nuclear energy, its benefits outweigh its cons. These benefits include the fact that it can produce carbon-free energy which is a factor that is highly beneficial for the planet as it will help contain the effects of global warming and climate change. Moreover, nuclear energy has a very low carbon footprint along with a small land footprint which means that nuclear facilities do not take as much space as other facilities such as windmills or even solar panels. Apart from this, nuclear power plants can produce more energy than fossil fuels which means that they are better suited to meet the rising demands of electricity. Lastly, this type of energy is far more reliable than traditional fossil fuels due to its accessibility and stability. Thus, there is no reason as to why nuclear energy must not be utilized in the future as it can not only help sustain the planet but also help people worldwide by producing more clean energy than ever before.

Works Cited

Beckrich, Amanda. “The Pros and Cons of Nuclear Energy.” Science Teacher, vol. 80, no. 3, Mar. 2013, p. 10. EBSCOhost, search-ebscohost-com.ezproxy.collegeofthedesert.edu/login.aspx?direct=true&db=a9h&AN=85672725&site=ehost-live.

Carless, Travis. "The US Shouldn't Abandon the Nuclear Energy Market." Issues in Science and Tech` 1nology, vol. 36, no. 2, Wntr 2020, pp. 19+. Gale In Context: Opposing Viewpoints, link.gale.com/apps/doc/A615490517/OVIC?u=desert&sid=bookmark-OVIC&xid=acfcf13f. Accessed 11 Oct. 2021.

Liu, Zhenzhou, et al. “A Long-Term Investigation of Environmental Radioactivity and Public Health around a Nuclear Power Plant.” *Journal of Radioanalytical & Nuclear Chemistry*, vol. 323, no. 2, Feb. 2020, pp. 825–829. *EBSCOhost*, doi:10.1007/s10967-019-06983-y

Ritch, John. "Nuclear Power Is Safe." Energy Alternatives, edited by Helen Cothran, Greenhaven Press, 2002. Opposing Viewpoints. Gale In Context: Opposing Viewpoints, link.gale.com/apps/doc/EJ3010220215/OVIC?u=desert&sid=bookmark-OVIC&xid=1248946f. Accessed 11 Oct. 2021. Originally published as "Nuclear Green," Prospect, Mar. 1999.

"Nuclear Energy." *Gale Opposing Viewpoints Online Collection*, Gale, 2020. *Gale In Context: Opposing Viewpoints*, link.gale.com/apps/doc/PC3010999227/OVIC?u=desert&sid=bookmark-OVIC&xid=29d36a34. Accessed 21 Sept. 2021.

"Nuclear Safety." Gale Opposing Viewpoints Online Collection, Gale, 2017. Gale In Context: Opposing Viewpoints,

link.gale.com/apps/doc/PC3010999038/OVIC?u=desert&sid=bookmark-OVIC&xid=f49ccbd1. Accessed 11 Oct. 2021.