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| STSE Category | Risks | Ranking | Benefits | Ranking |
| Science/Technology | Nukes |  |  |  |
| Society |  |  |  |  |
| Environment | **Issues with Radioactive Waste disposal.**  Modern nuclear fission reactors result in a significant amount of energy however have a disturbing by-product of hazardous waste. The current solution is to bury the radioactive waste underground in repositories to prevent leakage and future human contact. However the International Atomic Energy Agency says that “waste repositories represent possible sources of radiation exposure to humans” (International Atomic Energy Agency, 1996). The issue is that with the proliferation of nuclear power generation there is an increased amount of repositories which are taking up an increasing amount of area that is running out. These repositories also face the risk of unintentional human contact, if humans were to accidentally drill and reach one of these repositories this could lead to leakage and a devastation of the surrounding environment and potentially human population. | **Issues with Radioactive Waste disposal.**  3 – The issue of radioactive waste disposal is important because if nuclear power generation is to become more wide spread, another solution must be found as there is only a finite amount of space on the planet and these repositories risk contaminating the outside. However the International Atomic Energy Agency claims that the risk for contamination to the environment is low and that any such risks would occur centuries in the future (International Atomic Energy Agency, 1996). | **Nuclear Power Greenhouse gas emissions**  Nuclear fission generation has been shown to output less greenhouse gas emissions compared to other major energy sources. According to a report by Intrinsik, prepared for Ontario power generation that compiles data, shows that nuclear power generates approximately 0.15g CO2e/kWh compared to other sources such as Natural gas which outputs 525g CO2e/kWh. That is a 3500x increase in carbon emissions. | **Nuclear Power Greenhouse gas emissions**  1 – One of the biggest benefits of nuclear power is its lack of greenhouse gas emissions compared to other sources of energy. This is extremely important as greenhouse gas emissions are an incredible factor in global climate change which unless stopped will cause devastation to the environment including mass migration of people and animals and the transition of once fertile lands into inhospitable wastelands. By converting sources of energy such as coal and natural gas to nuclear power would reduce these greenhouse gas emissions and thus lessen the impact of climate change. |

# Bibliography

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