Economic Feasibility of Generation IV Nuclear Reactors

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Abstract

Generation IV nuclear power plants are almost ready for primetime, but there are several things that need to happen first. Test reactors need to be built to test mechanical, fuel, and safety features, the public needs to decide whether to support building of new reactors, and nuclear policy needs to stabilize for the length of time required to really invest in nuclear power.

Methods/Process

- For resources, we used journals, reports, Case Studies/Test Cases, Surveys, Newspaper Articles, Webpages from the World Nuclear Association, Generation IV International Forum, and the Department of Energy
- For research tools, we used a combination of Google Scholar, WPI Summon, and manually searching websites for articles related to nuclear power
- Additionally, we collaborated with Nuclear Policy Group to create a survey of our own, which we distributed to WPI students

Results/Outcomes

- From a Technology, Safety, and Fuel standpoint, Generation IV plants are possible in anywhere from 5-15 years depending on the progress of research during this time
- From a sociopolitical standpoint, the future is a lot more unclear. While the technology is there, there is not a lot support for it.

Conclusions/Recommendations

Our research has led us to draw the conclusion that commercial Generation IV Nuclear Power Plants are possible in 5-15 years. This can happen if the technology is cheaper, more reactors are built, officials more willing to push for increased nuclear power are elected, and public awareness of the safety and benefits of nuclear power increases.

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References

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