

Mohammad Ahmad Hussain Khan

I think that a problem we have all experienced in today's society is the problem of keeping devices charged. As we transition to increasingly electronic, digital, and online ways of living and working, the laptops, phones, tablets, tools, and vehicles we use must be kept charged regularly. This is not always easy or environmentally friendly however, and has become a very contentious issue across the world, evidenced by projects like the Keystone XL pipeline as well as disasters like the MV Wakashio spilling around 1000 tons of oil into the ocean just off of the coast of Mauritius. This topic of moving energy greatly interests me.

Today, the possibilities of power beaming and space-based solar power are endless. More solar energy reaches the Earth every hour than humans use in an entire year, and 30% of this energy is reflected by clouds and the atmosphere. This energy represents an enormous potential for meeting today's energy consumption demands. Additionally, using solutions based in space such as microwave satellites would be better because they are not hindered by many of the troublesome obstacles on Earth, like the atmosphere and clouds. By having full access to solar power, the energy efficiency of such a solution would be very optimal for meeting our needs. The amount of energy that can be harnessed by ideas like this inspires me, especially because of how environmentally friendly it is. This technology represents a sustainable, clean and powerful energy source for the Navy and the Marine Corps, to supplement all the vehicles and devices that they use.

A scientist working in this field that inspires me is Dr. Paul Jaffe. His video on his research into the efficiency and methodology of moving power using beaming and other methods was very interesting, and opened my mind to a technology I had not thought of or heard of before. His work inspires me because the issue of climate change is a very pressing one for today's society, and the hunt for sustainable energy options is very intense. His solution is very novel and harnesses the energy of an existing source, the Sun, which is very close to us and represents a great potential for humanity's power consumption. This aligns with my career goals, because I also want to do research into energy and power, though I want to focus on batteries and how we can use chemistry to design better power storage and transportation options.

I imagine that the technology Dr. Jaffe and others are researching will continue to grow over the next 15-20 years. From further development of the dependent technologies such as satellites and solar panels to real world testing and implementation, it will be exciting to watch the progression of power beaming as it becomes a viable alternative to modern energy delivery systems. I think these advances will positively impact the Navy and the Marine Corps in the future, especially as they start to rely more on technologies like electric vehicles and battery-powered tools. It will also improve the logistics and efficiency of power transport and usage in difficult locations like out at sea, or in remote and undeveloped places like the deserts, or Antarctica. Overall, this technology represents a potentially massive improvement in sustainability and efficiency.

To conclude, power beaming is a very inspiring topic to me, and represents a great potential improvement for the Navy and the Marine Corps.