



# Alameda Point Project Overview & FAQ

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## **Pacific Fusion Overview**

Pacific Fusion is a company founded in 2023 with the objective to power the world with affordable clean energy.

The company utilizes an approach known as pulsed magnetic inertial fusion, which combines deuterium and tritium atoms to produce helium and release energy.

Here is a brief explanation of how pulsed magnetic fusion works:

- A brief but very large electric current is run across a small metal cylinder (less than half an inch in size) containing fusion fuel.
- The electric current creates a powerful magnetic field that rapidly squeezes the cylinder to reach fusion conditions, releasing large amounts of energy which is then used to generate electricity.
- The process is repeated over and over.

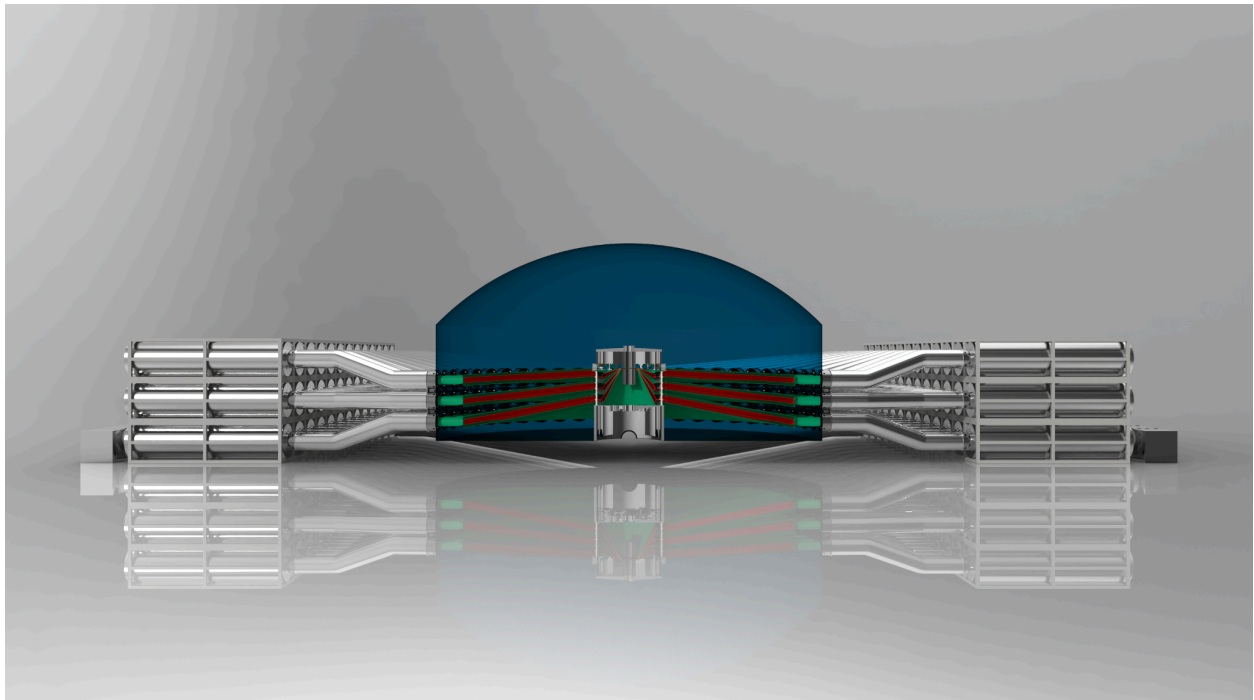
More information about Pacific Fusion can be found at [www.pacificfusion.com](http://www.pacificfusion.com).

## Alameda Point - Project Overview

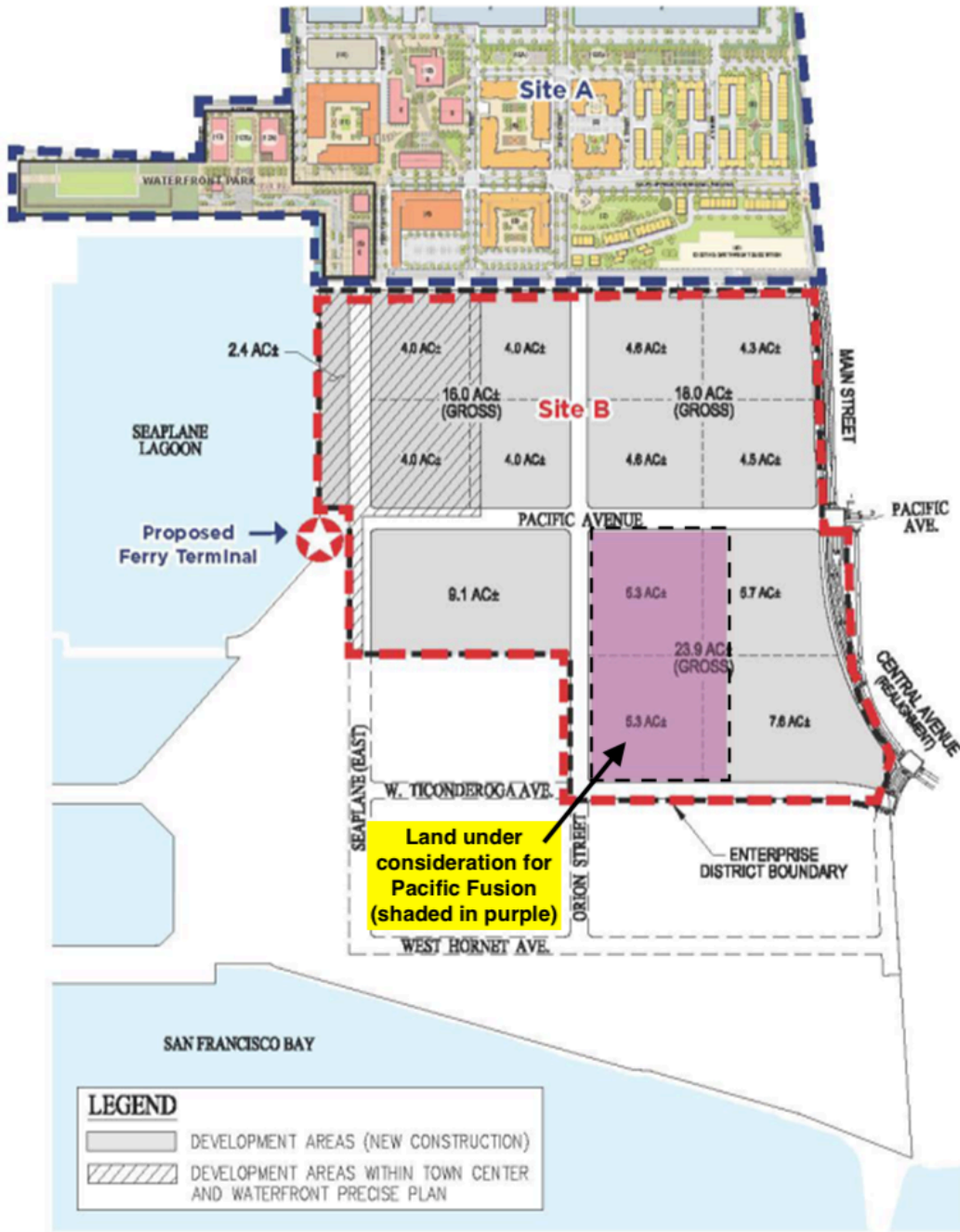
Pacific Fusion is constructing a one-of-a-kind, state-of-the-art fusion research facility. This facility, known as Pacific Fusion’s Demonstration System, will demonstrate that it is possible to get more fusion energy output than stored energy at the input—a fusion milestone known as net facility gain. Proving these conditions is an essential milestone to building a power plant and putting carbon-free electricity on the grid.

The Demonstration System is not a power plant; it is a fusion research facility. It will not produce electricity, and it will be “pulsed” about once per day. Approximately 250 people would be employed in this facility.

The system is designed to be inherently safe—it uses a highly effective passive water shield to make sure neutrons and intense light resulting from fusion are captured and remain confined to a small area at the center of the system, thus ensuring no radiation can exit the facility.



Render of Pacific Fusion’s Demonstration System



The above map shows the portion of Site B on Alameda Point that Pacific Fusion is considering.

Below are some common questions associated with fusion energy and Pacific Fusion’s Demonstration System. If you have more questions about this project, feel free to reach out at [alamedacommunity@pacificfusion.com](mailto:alamedacommunity@pacificfusion.com).

## What is fusion?

Fusion is a process that has powered our sun and the stars for billions of years. It is the process of joining light atoms together, which is the opposite process of fission (splitting heavy atoms).

Harnessing fusion here on Earth could provide limitless, clean, on-demand power to drive prosperity around the world. But for fusion power to be commercially viable, we need an approach that combines established science, practical engineering, and affordable manufacturing.

## Is fusion safe?

Fusion is safe. The International Atomic Energy Agency provides an excellent resource for information regarding fusion energy and its operational considerations. You can read more [here](#). A few key points are summarized below:

- Fusion is among the most environmentally friendly sources of energy.
- Its two sources of fuel, deuterium (an isotope of hydrogen) and lithium, are widely available on Earth. Lithium is used to produce another hydrogen isotope called tritium, which is used in small amounts and contained in a closed circuit. Tritium is weakly radioactive (a beta emitter) and has a short half-life.
- Fusion systems are inherently safe; they cannot “run away” or melt down.
- Fusion does not create any long-lived radioactive waste.

## What are the regulatory requirements and permits needed to operate the facility?

Pacific Fusion’s Demonstration System is a fusion research device; it is not a power plant. The system is designed to be inherently safe—it uses a highly effective passive water shield to make sure neutrons and intense light resulting from fusion are captured and remain confined to a small area at the center of the system, thus ensuring no radiation can exit the facility.

There are two key components of permitting for this R&D facility:

- Standard permitting and zoning, which is required in [Alameda](#) for any large scale research or manufacturing facility, and
- Licensing from the [State of California Department of Public Health](#) to possess small quantities of radiological material (tritium). A similar license would be obtained by universities or research facilities that conduct scientific or biomedical research.
  - Note: The Department of Energy controls the production of tritium for use in fusion research facilities, such as the [National Ignition Facility](#) in Livermore, CA and the [Z Facility](#) in Albuquerque, NM.



Beginning in 2029, Pacific Fusion’s Demonstration System will use small quantities of tritium (approximately the amount found in standard self-luminous exit signs) in a closed circuit (a closed processing loop with no venting). This use case will be licensed with the state. The licensing process requires a validated plan for safe operations, material storage, byproduct waste management, and system decommissioning. The licensing process also includes ensuring safe operations with tritium, which includes monitoring radiation produced during the fusion process.

### **What will the byproducts of this process be, and how will they be controlled, disposed of, and stored?**

The [Radiological Health Branch](#) of the State of California Department of Public Health controls all aspects of operations of Pacific Fusion’s facility. This includes any byproduct materials as a result of fusion research at the Demonstration System. Small quantities of low-level radiological waste byproducts, such as metal debris that has been activated, will be stored temporarily onsite and disposed of through registered radiological waste brokers as part of the state-regulated waste management program, similar to university and medical facilities that use radiological materials. Tritium is processed in a closed loop and reused.

### **How will you assure that nothing is released into the community (storm drains, emissions, etc)?**

There are no pathways to releasing radiological materials into the community. Tritium systems are closed loop, and byproduct materials, such as metal debris, are confined and stored on site using state-approved containers and removed using waste management processes.

### **How are tritium and deuterium stored and how do you assure safety?**

Deuterium and tritium are stored in gaseous form.

Deuterium is procured from local gas suppliers and does not have any special handling requirements.

Tritium will not be used in Pacific Fusion’s Demonstration System until 2029. Tritium is provided<sup>1</sup> by the Department of Energy in approved<sup>1</sup> transportation containers. It is stored as a gas in containers in licensed glove boxes and is continuously monitored. Tritium inventory is

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<sup>1</sup> Tritium production is controlled by the Department of Energy. Pacific Fusion will begin working with DOE regarding sourcing tritium to ensure it is made available for operations in 2029.

closely monitored and regularly reported, consistent with the requirements of the radiological licensing process.

### **What are the Demonstration System’s power requirements? How will Alameda Municipal Power (AMP) be affected?**

This facility will be a fusion research facility, not a power plant.

The facility will require roughly 3.3 megawatts (“MW”) of power at peak with an average power draw most of the time at about half that level, making it a relatively small user of power provided from AMP.

### **Are there noise or vibration concerns?**

There are no mechanisms to produce noise or vibration during daily operations.

### **What benefits does this project bring to Alameda Point?**

This project represents a billion-dollar capital investment in Alameda Point, revitalizing largely vacant land designated for commercial and light industrial development. It will directly create 250 jobs in Alameda and bring hundreds more jobs to the region.

In addition, Pacific Fusion’s investment in foundational infrastructure would lower the barrier to entry for new businesses at Alameda Point. This, in turn, would bring more jobs to the community and further increase professional and educational opportunities for local residents, including younger generations.