



The next generation of power is here— the Natrium® Reactor and Energy Storage System

Built for the 21st century grid, TerraPower's Natrium technology is one of the fastest and lowest-cost paths to advanced, zero carbon energy.

The Nuclear + Storage Solution

Unlike today's Light Water Reactors (LWR), the Natrium reactor is a **345-megawatt sodium fast reactor** coupled with TerraPower's breakthrough innovation—a molten salt integrated energy storage system, providing **built-in gigawatt-scale energy storage**. The Natrium reactor maintains constant thermal power at all times, maximizing its capacity factor and value. Molten salt energy storage is more resilient, flexible and cost-effective than current grid-scale battery technology.



Innovative + Simple Design

The Natrium plant design is simple and streamlined, making it **easier, faster and cheaper to construct** compared to all other reactor designs.

Our innovative design significantly reduces the quantity of nuclear-grade safety equipment and materials, lowering plant costs. With enhanced safety features that rely on natural forces and advanced design, the Natrium plant's low-pressure system and use of sodium as a coolant allows for a smaller Emergency Planning Zone (EPZ) which increases the number of possible sites.

Offering multiple solutions to the needs of energy users and producers and **designed to integrate with renewables**, the Natrium system is cost-competitive with all other forms of clean energy generation with an **operational lifespan of up to 80 years**—paving the way for long-term, sustainable power generation.

THE Natrium TECHNOLOGY'S ADVANCED DESIGN ENABLES SIMULTANEOUS PRODUCTION OF CARBON-FREE ELECTRICITY, HEAT AND STEAM TO SUPPORT DECARBONIZATION OF POWER AND INDUSTRIAL SECTORS.



With the separation of major structures into a nuclear island and energy island, the Natrium plant requires less nuclear-grade safety equipment and is designed to utilize construction material quantities that are comparable to a combined cycle plant and significantly less than other reactor designs.



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NATRIUM BY THE NUMBERS



REACTOR THERMAL OUTPUT

840 MWt

POWER OUTPUT – NUCLEAR ISLAND

345 MWe

POWER OUTPUT – ENERGY STORAGE SYSTEM

100-500 MWe+ for 5.5+ hours,
power ramping at 10% per minute

FUEL EFFICIENCY

3 times more efficient than LWRs

CONSTRUCTION COST EFFICIENCIES

~50% less concrete, steel and onsite labor
compared to competitors

RAPID CONSTRUCTION

~36 months from nuclear concrete pour to fuel load

HEAT OUTPUT

Greater than 500 degrees Celsius
(930 Fahrenheit equivalent)

PRIMARY OPERATING PRESSURE

Low pressure/Atmospheric

OVERALL SITE AREA

Flexible, site specific design & 1/3 size of LWRs

UNDER DEVELOPMENT NOW

TerraPower is currently building the first Natrium plant in the Mountain West and plans for rapid scale up and broad deployment as energy users demand clean, flexible energy and stability for the grid.



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