



NuScale's modular, scalable nuclear reactor technology is protected by over 100 US and foreign patent applications, including US20090161812, US20090129531, US20090129530, and US20090129532.

Let's change the power that changes the world. NuScale is creating an energy that is smarter, cleaner, safer, and cost competitive.

## SMARTER

Smarter energy means keeping an eye out for simplicity. With this in mind, the NuScale Power Module™ (NPM) is comprised of the reactor vessel and containment vessel in a single cylindrical module. The NPM has no reactor coolant pumps, no external steam generator vessels, and no large reactor coolant piping. This translates into lower cost to fabricate, install, operate, maintain, and decommission, thereby reducing the life-cycle cost of energy production while lowering operational risk.

## CLEANER

The need for carbon-free power has never been greater. Changing regulatory requirements, a challenging economic environment, and uncertain long-term fossil fuel pricing means a diverse energy mix is essential to meeting that need. The NPM's innovative, efficient design has produced a power source that is 100% carbon-free clean energy—energy as clean as wind or solar, and cleaner than any fossil fuel.

## SAFER

The NPM was designed to set new standards for safety. Safety systems are passively-driven, eliminating human and mechanical error. There are no operator actions required to ensure a safe shutdown of the plant. Additionally, the innovative design is resilient to climate, cyber, and physical threats. NuScale's small modular reactor sets a new standard for nuclear safety performance.

## COST COMPETITIVE

The economics of this advanced nuclear technology offer long-term financial certainty over the plant's life. The NPM is far less complex than other designs. Off-site fabrication and assembly reduce cost. Components are delivered to the site in a ready-to-install form. All of this results in construction occurring in a shorter, more predictable period of time.

NuScale is truly the answer to changing the power that changes the world.

For more information about NuScale Power, visit [nuscalepower.com](http://nuscalepower.com).



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# NuScale Power Module™

**THERMAL CAPACITY** | 200 MWt (gross)

**ELECTRIC CAPACITY** | 60 MWe (gross)

**CAPACITY FACTOR** | > 95%

**DIMENSIONS** | 76 feet x 15 feet cylindrical containment vessel module containing reactor and steam generator

**WEIGHT** | About 700 tons are shipped from the factory in three segments

**TRANSPORTATION** | Truck, rail or barge

**MANUFACTURING** | Forge and fabricate at facilities in the U.S.

**COST** | Numerous advantages due to simplicity, modular design, volume manufacturing and shorter construction times

**FUEL** | Standard LWR fuel in 17X17 configuration, each 2 meters in length, up to 24-month refueling cycle with fuel enriched at less than 5%



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## Smarter, cleaner, safer nuclear power

NuScale Power has created a new kind of nuclear plant—smarter, cleaner, and safer in every way possible. It is a smaller, scalable version of pressurized water reactor technology, designed with passive safety features.

The NuScale® plant is designed smarter—by simplicity—than any nuclear plant before, producing zero carbon energy in a safer way. It maximizes the uses of passive safety and natural forces, such as gravity, convection, and conduction, to operate. This eliminates the need for many of the large and complex systems required in today's nuclear plants. This simplicity allows NuScale's Small Modular Reactor (SMR) to be factory-built and transported to the site. It allows NuScale plants to be faster to construct, and less expensive to build and operate. Resulting from this construction is 100% carbon-free energy, which is as clean as wind or solar and cleaner than fossil fuel.

Its smart design also makes NuScale's SMR scalable. Additional modules can be added, providing incremental increases in capacity as electricity demand grows. NuScale Power Modules™ (NPMs) can be deployed at 60 MWe increments up to 720 MWe (gross) in a single plant. This flexible design allows for multiple applications. Individual modules can support desalination, integrate with renewable resources, provide highly reliable power to mission critical facilities (e.g., data centers, hospitals), or serve as clean baseload power. This gives customers with initially lower power requirements the option for the economical addition to their portfolio reliable carbon-free power. The ability to power cities or remote locations provides power for all humankind.

Though the number of NPMs may vary from location to location, the level of safety does not. The NPM sets a new standard for safety performance.

## Safety features of NuScale's design

Powering all humankind is a top priority. So is ensuring its safety. NuScale's Triple Crown for Nuclear Plant Safety™ has achieved a paradigm shift in the level of safety of a nuclear power plant.

NuScale's SMR technology is a revolutionary solution to one of the biggest technical challenges for the current fleet of nuclear energy facilities. Its innovative and comprehensive safety features provide stable, long-term nuclear core cooling under all conditions, including severe accidents. These safety features include:

- *In a station blackout condition, The Triple Crown for Nuclear Plant Safety enables the NuScale Power Module™ to safely shut down and self-cool indefinitely-with no operator action, AC/DC power, or additional water needed.*
- *Natural circulation for normal operation eliminates the need for large primary piping and reactor coolant pumps.*
- *The Containment vessel is submerged in a below-grade pool of water housed in a Seismic Category 1, aircraft impact resistant building that serves as the ultimate heat sink for core cooling.*
- *Each NuScale Power Module houses approximately 5% of the nuclear fuel of a conventional 1,000 MWe nuclear reactor.*

