Cold fusion energy is the most valuable resource in our modern world. Without it, nothing moves, nothing is produced, and nothing gets done. It's not because we all suddenly become lazy slobs; it's because the modern world becomes impossible without it. Fusion energy produces no waste, no carbon dioxide, no methane, no dangerous radioactive material, and no form of rare fuel required. The Lawrence Livermore National Laboratory in California did the impossible for the first time in human history using fusion energy. Fusion is completely natural - look up at the sky during the daytime and you'll see a giant fusion reactor in the sky! If we could do this on earth and control the energy released, it would be the biggest change to the course of human history. The United States Department of Energy decided to throw their weight fully behind fusion energy in 1997. The National Ignition Facility was built construction started in 1997 and concluded in 2009. As time wore on, there was little to show for fusion and the investment into fusion energy never grew and progress started to slow. However, in late 2022 they made some improvements to the fuel target design and in one fell swoop achieved 154 of ignition conditions. They got more energy out of the reaction than they put in.

Lasers are amplified by racing back and forth and the flash is a fraction of a second. The shells are almost perfectly round they have a roughness that is 100 times better than a mirror. They used a thicker target so it would hold its shape longer and they figured out how to boost the power of the laser shot without damaging the lasers. The Lawrence Livermore National Laboratory produced 1.5 times as much energy than was used to cause the reaction by the lasers, but there's a massive catch: this measurement only accounts for the energy in a very narrow way, it only considers the actual laser energy hitting the fuel. The biggest gains could be made from the lasers themselves—the National Ignition Facility is using outdated technology—but this is where the other approaches of nuclear fusion come into play. The most common way to achieve this is by using electromagnets, microwaves, and particle beams to heat hydrogen gas and turn it into plasma. This plasma gets squeezed by superconducting magnets in a donutshaped ring, and eventually, nuclear fusion reactions take place inside of it.

The National Ignition Facility (NIF) has been responsible for numerous innovations in fusion energy research, including the successful demonstration of multiple nuclear fusion reactions in 2014. This breakthrough project has brought us one step closer to the day when fusion energy can be used to power our world.