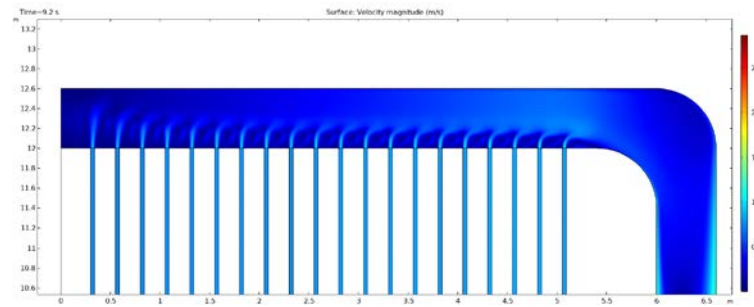


INNOVATION AT Polar Night Energy

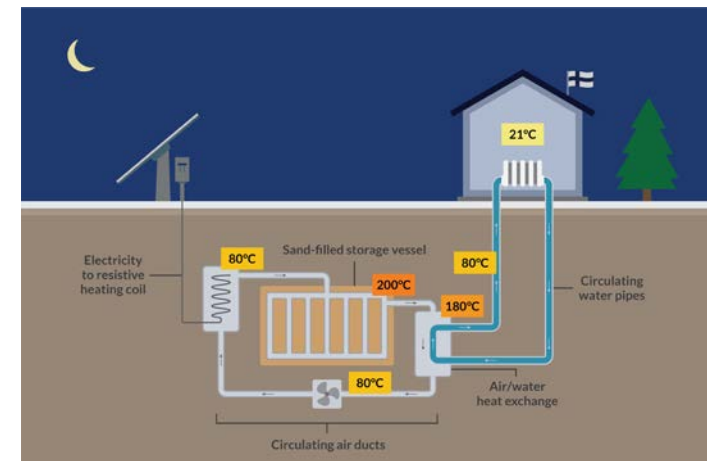
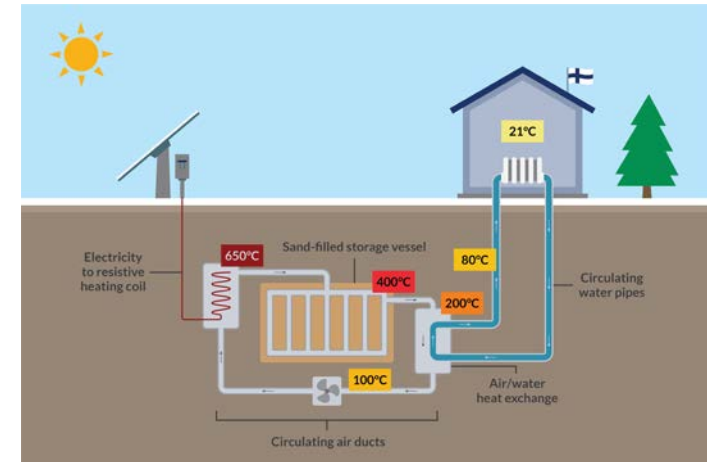
Solar Energy Stored in Sand

In Finland, a region known for long winter nights, where 82% of energy-related emissions come from heating domestic buildings, Polar Night Energy is developing a system that can heat buildings with stored solar energy — all day, all night, and all winter long.

The Polar Night Energy team's cost efficient and green system stores solar-generated heat in sand and delivers it to the building via a heat exchanger and water pipes.



The team used modeling and simulation to determine the space required for efficient heat transfer between the sand and the air circulating system as well as to design the heat exchanger.



"We cannot possibly build full-size prototypes to test all of our ideas. We need predictive modeling to answer as many questions as possible, before we commit to assembling all this equipment — and all this sand!" — *Tommi Eronen, CEO of Polar Night Energy*