



Evaporative desalination with industrial waste heat

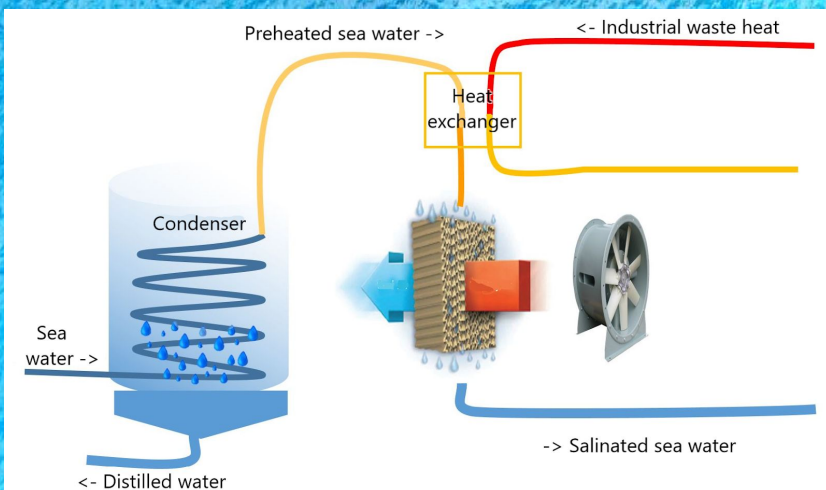
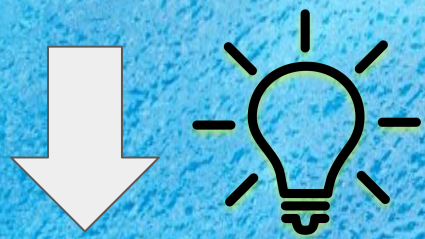
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Problem
Industries consume 60% of all the freshwater in developed countries, potentially causing water shortages. They also have huge amounts of waste heat that can't be used during the summer.



Future
With the prototype results I founded my own company, Helios Innovations, and started a research collaboration with a world leading metal industry called Höganäs. I'm currently leading the construction of a full-scale pilot facility in Sweden that will be able to produce 40.000 liters per day. The construction is expected to be completed by 2020.

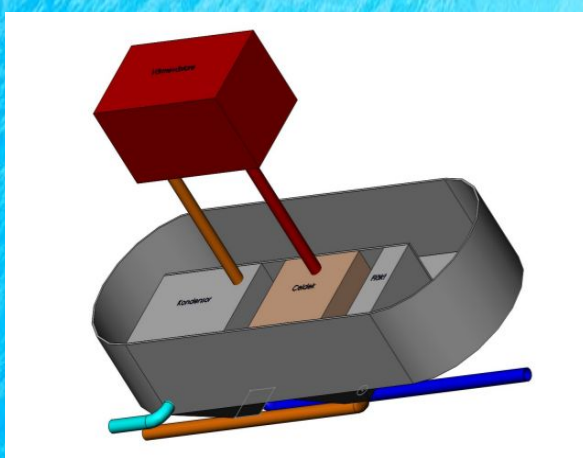
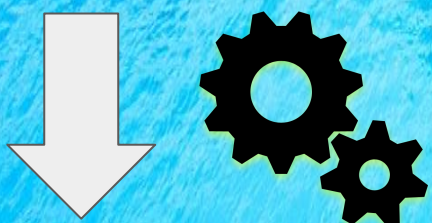


Solution
With these facts in mind I have developed a new desalination method that utilizes this waste heat and water's evaporative properties to purify saltwater.



Result
After nearly 8 months the work paid off. I had developed a desalination method that could:

- Clean 1000 liters for only 0.06€
- Remove 99.99% of all ions from the saltwater
- Decrease desalination plant construction costs by 90% (Compared to Reverse Osmosis, the world's most used desalination method)



Execution
The first step of my project was to design and construct a prototype capable of purifying 750 liters per day, allowing me to run tests to prove the concept.



Testing
I conducted several tests with the newly constructed prototype to confirm that my new innovation worked, and to what extent. The main goal was to extract data on energy consumption, purification level and construction costs.

