

AquaFresh

Team 17

Project Description:

The project goal is to design a desalination unit for one household using a solar powered vacuum pump system. The design includes heat exchange between the low pressure salt water vessel and the high pressure pure water vessel. The solar cell powers the vacuum pump, heating element, controls system, and user interface, that together automate the process of desalination. Both vessels are instrumented to monitor tank levels, temperature, pressure, and salinity. An automated wash out process is included to prevent build-up of brine in the saltwater tank. The design process includes a proof of concept of vacuum desalination before moving forward with building a unit to serve a single household. The design takes into account both ease of use and maintenance of the machine. The intent is to design a machine that could be both used and maintained by an average homeowner.



Kurtis DeVries-ME Jake Westerhof-ME Alex Vander Tuig-EE Ryan Farris-ME