

## **An Analysis of the Technology in Thermolift – by Andrew Hunter**

### **Background**

We were recently introduced to a new heat pump technology which is in the development stage and which is being marketed under the name Thermolift. It is based on an original thermodynamic design by Vuilleumier about 100 years ago. [https://en.wikipedia.org/wiki/Vuilleumier\\_cycle](https://en.wikipedia.org/wiki/Vuilleumier_cycle)

A German engineer Dr Peter Hofbauer has worked on it for years and brought the technology to the US. A recent Hofbauer et al patent is -

<http://www.google.com/patents/WO2013155258A1?cl=en>

Here is part of the description from their website ([www.tm-lift.com](http://www.tm-lift.com)) -

“ThermoLift was founded in 2012. The company is developing a thermal heat pump technology and has received grants of \$750,000 from the US Department of Energy and \$482,000 from the New York State Energy Research and Development Authority (NYSERDA). We are based at the Advanced Energy Research and Technology center at Stony Brook University (AERTC).”

“We are developing our technology in collaboration with Oak Ridge National Laboratory, Stony Brook University, Applied Thermodynamic Apparatus (ATA) and have established relationships with Brookhaven National Laboratories, National Grid and the Department of Defense.”

### **Task**

The team project is to carefully examine the claims for the device and determine its likely market, its rate of return of capital and the feasibility of its being successfully scaled up to a large full-scale unit.