

Abstract Submitted
for the NWS08 Meeting of
The American Physical Society

Conversion of an air conditioning unit to a heat pump TIM VAUGHAN, DON SCHNITZLER, Linfield College — Energy usage and its environmental impact continue to be growing areas of concern globally. Space conditioning accounts for a large percentage of energy consumption annually as billions of dollars are used to heat and cool residence and commercial areas. Heat pumps are efficient space conditioners due to their ability to transfer existing heat instead of creating heat. Increased heat pump usage, especially when teamed with renewable energy sources, is a viable environmentally friendly option in the future. Interestingly, heat pumps function on the same basis as everyday refrigerators and air conditioners, yet unlike air conditioners, they have the ability to both heat and cool. In this project, an air conditioning unit has been successfully converted to a working air source heat pump. The project demonstrates the operation of a heat pump. The thermodynamics of heat pumps and methods for measuring heat pump efficiency are discussed.

Tim Vaughan
Linfield College

Date submitted: 18 Apr 2008

Electronic form version 1.4