A Versatile Solar and Electric Water Distiller

Azzeddine Ferrah
Faculty of Engineering,
Sharjah, UAE
aferrah@gmail.com

Marwa Samer, Farah Mohamed, Maitha Abdulla,
Muna Obaid, Shamsa Humaid & Hamda Ahmed
Faculty of Engineering,
Sharjah, UAE

***Abstract*— The present paper discusses the feasibility and the features of a newly designed portable water desalinator/distiller. The goal is to design a small unit for desalinating or distilling brackish or soiled water. The proposed desalinator/distiller is a hybrid system that uses two sources of energy, namely: solar and electrical. It relies on solar energy when being used at locations where electricity is expensive or inaccessible. On the other hand, it uses electric energy when sunshine is unavailable for considerable periods of time, such as under rainy or cloudy skies, or during winter seasons when the sun radiation is weak or not enough to evaporate water. This innovative project is aimed to benefit communities in rural villages, long journey travelers in deserts and arid mountains, people living alongside polluted rivers and lakes, and people living in refugees' camps. It can also benefit people with hard water supplies. The paper investigates and discusses the proposed hybrid desalinator/distiller (HDD). The work presented is based entirely on the work carried out by final year electrical engineering students, during their capstone design project. The project work, presented, is a manifestation of the students learning during previous semesters. It puts into practice the application of thermal and heat transfer principles, that the student learned in earlier courses.**

***Index Terms*—Desalination, desalinator, distiller, solar still, solar energy.**

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