STUDY ON SOLAR UPDRAFTING TOWER

ABSTRACT

A solar updraft tower power plant – sometimes also called 'solar chimney' or just ‘solar tower’ – is a solar thermal power plant utilizing a combination of solar air collector and central updraft tube to generate a solar induced convective flow which drives pressure staged turbines to generate electricity. The paper presents theory, practical experience, and economy of solar updraft towers: First a simplified theory of the solar tower is described. Then results from designing, building and operating a small scale prototype in Spain are presented. Eventually technical issues and basic economic data for future commercial solar tower systems like the one being planned for Australia are discussed.