RENEWABLE ENERGY IN CALIFORNIA : PROS AND CONS

Multi purpose HEP schemes in California

Over 10% of the energy needs of California are usually provided by HEP, although this has fallen in the recent drought. Most HEP schemes use the higher winter relief rainfall and spring snow melt of the Sierra Nevada mountains stored in reservoirs by dams to produce the electricity. This energy is renewable and 'green' as it produces no carbon dioxide and has no impact on global warming; it is also safe, flexible, cheap, after the initial cost of the dam, and reliable. Most schemes are multipurpose as they also prevent floods, replenish aquifers, provide water for urban areas and provide recreation opportunities.

Some environmentalists oppose large HEP schemes, however, and valuable farmland may be flooded and historical and cultural sites of indigenous peoples such as the 'Wintu' indians may be lost. Dams and reservoirs also have a negative impact on aquatic ecosystems endangering species and reducing biodiversity.

The open plains of the Mojave desert and mountain passes where winds are strong and unhindered by vegetation are perfect for the generation of electricity using wind turbines in large wind farms. A Mega-project at Alta produces enough electricity for 600,000 homes. The area near Palm Springs also has many wind farms, but at the moment only 3-4% of Californias energy comes from the wind. Cheap, clean and renewable it helps with energy security for California and the USA.

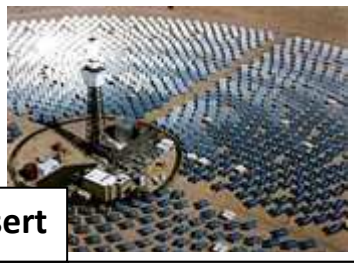
Conservation and environmental groups are, surprisingly, against some of the plans despite winds green credentials. Wind farms affect the quality of views and this has a negative impact in conservation areas and National Parks. Tourism can be affected and the turbines have a negative impact on the ecosystem, flora and fauna. Birds are said to be killed by the rotating turbine blades and bats lungs have been shown to explode due to pressure variations.

Wind farms in the Mojave desert

The Mojave desert in Southern California is an excellent place to generate solar energy due to its clear skies and long hours of sunshine. The Mojave Solar Park has been set up with the most recent solar installation at Ivanpah, where enough electricity will be generated to provide for 140,000 homes. It is thought that eventually solar power could provide for all the electricity needs of California. This clean, renewable energy will save 400,000 tons of carbon dioxide emissions.

During the building phase it provided 3000 jobs and there will be 90 permanent employees. This brings increased revenue and more taxes to the area which can benefit from the multiplier effect.

There are drawbacks. The area is a National park and the residents and visitors will be affected by increased traffic and noise pollution and the decrease in the beauty of the desert. The energy park covers 14sq km. 100 species of plants are now endangered and animals like the desert tortoise are losing their habitats and having their migration routes threatened. There is a loss of water and a destruction of the soil which can capture less carbon. Not only is the ecosystem stressed but some birds have been burnt and butterflies and dragonflies killed by the concentration of solar energy by the mirrors.



Solar power in the Mojave desert