

Concentrating Solar Power (CSP) Dish Systems B-Roll

Scene-by-Scene Description

Get the facts behind the footage available on the U.S. Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy (EERE) B-Roll Web site at eere.energy.gov/news/b_roll.cfm.

Video Title: Dish Concentrating Solar Power Plant B-Roll

Video Only/No Audio

Location: Phoenix, Arizona

Shoot Date: April 26, 2010

Total Running Time: 3:26

Scene 1: 00:05: Wide shot of dish CSP power plant. The system's concentrating dishes are mounted on a structure with a two-axis tracking system to follow the sun.

Scene 2: 01:00: Close-up shots of Stirling engine receivers. The thermal receiver absorbs concentrated beams of solar energy, converts them to heat, and transfers the heat to the engine/generator.

Scene 3: 01:43: Various shots showing relation to nearby power plant. Power plants with CSP systems reduce carbon emissions as they use the sun as a heat source rather than fossil fuels.

Scene 4: 02:44: Wide low-angle shots showing dish size. Modular system projects have been built with total capacities up to 5 megawatts (MW). The modules have maximum sizes of 50 kilowatts (kW) and have achieved peak net efficiencies of up to 30%.

Learn More about CSP Dish Systems

Concentrating solar power (CSP) devices concentrate energy from the sun's rays to heat a receiver to high temperatures. The receiver has a fluid that heats water, turning it to steam. The steam spins a turbine, which generates electricity. One form of CSP technology is the dish/engine system, which uses a mirrored dish to concentrate sunlight onto a thermal receiver, which absorbs and collects the heat and transfers it to an engine generator to produce electricity.

CSP technologies like the dish/engine system can generate electricity at relatively low costs and deliver power during periods of peak demand due to their capacity for thermal storage. Consequently, many utilities are including CSP in their power-generation portfolio, helping the nation reduce its dependence on fossil fuels.

In partnership with solar companies, universities, and national laboratories, DOE funds research and development of dish/engine and other CSP systems. The EERE Solar Energy Technologies Program (SETP) promotes the advancement of cost-effective solar energy technologies such as the CSP dish/engine system. Program goals include deploying more CSP, making CSP competitive in the intermediate power market by 2015, and developing advanced technologies that will reduce systems and storage costs, thus enabling CSP to be competitive in the baseload power market by 2020. More information is available on the SETP Web site at eere.energy.gov/solar.