

SOLWATT: SOLving WATER Issues for CSP planTs

Description

SOLWATT targets to significantly reduce the water used by CSP plants (by 35% for wet cooled & by 90% for dry cooled). The project proposes to demonstrate the efficiency of innovations on solar field cleaning, power-block cooling, waterrecycling system, and plant operation strategy. Among these are solutions to reduce solar field water cleaning needs, anoperation and maintenance optimizer software including soiling forecaster, a MEE water recovery technology running onotherwise dumped heat from the solar field, and a cooling concept for the turbine condenser storing excess heat whenambient is too warm, then releasing it during cool night times.The solutions will be implemented at two CSP operational sites, La Africana parabolic trough plant in Spain and Ashalim central receiver plant in Israel, to demonstrate significant reduction in water use while making CSP more cost effective, andachieving near-to-market status.

The solutions are best applied together, but each will also bring water and cost savings onits own, thanks to their ability to fit any kind of CSP plant; dry, wet, or hybrid cooled, existing or future ones, tailored tolocation and policy framework. Their application will save more than 0.5 M[€] /year of operational cost for a 50 MW CSP plant.Regarding competition on water resources and humanitarian issues, the social acceptance of CSP will be increased bydetailed analysis of case studies and education of local population to the benefits of solar energy.The targeted savings of water and operation costs will increase CSP s competitiveness compared to other renewable energyand the electricity market in general, as well as its acceptance within local communities, achieving a big step forward in theSET plan goals for CSP technology by 2020. The consortium, led by TSK Electrónica y Electricidad S.A. (Spain), is made upof 13 partners from 6 European countries plus Israel, including 5 industrials partners, 2 SMEs, 5 RTOs and one University.

Barcelona Supercomputing Center - Centro Nacional de Supercomputación

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