

Optimisation in Plant Operations for a 100 MW Central Receiver CSP Plant with Focus on the Plant Operating Strategies

The operational capabilities of the central receiver Concentrated Solar Power (CSP) plant is demonstrated under various boundary conditions by resulting on key plant performance parameters. The developed simulation model optimises the plant operations for various operating strategies identified.

One of the significant findings is the part-load operational optimisation for the power block to increase the plant performance, generate more output, reduce annual turbine stops and reduce plant Levelized Cost of Energy (LCOE). The utilisation factor in grid constrained areas is increased by providing continuous power delivery to the electric grid and offering complimentary services to non-dispatchable generation such as wind and photovoltaics.