

## **Forecast Based Energy Optimization for Solar Photovoltaic and Hybrid Energy Systems**

### Abstract/Summary:

A former remote area power supply was converted to a smart cogeneration subnet with combined heat and power to develop and validate a forecast based energy management at the University of Applied Sciences in Offenburg/Germany. Locally processed weather forecasts and forecasted demand profiles are integrated to allow a precise reaction to changes of fluctuating power sources, changes in scheduled demand profiles and to improve the energy efficiency of the supply. The management of the electrical and thermal storages is influenced by the forecasted energy contributions and the forecasted demand. Further approaches should improve the accuracy of forecasting algorithms and integrate parameter models gained of a detailed monitoring to realize predictive controllers.

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