

Mechanical Engineering Master's Defense

Optimization of the Implementation of Renewable Resources
in a Municipal Electric Utility in Arizona

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abstract

An electric utility in Mesa, Arizona with a peak load of approximately 85 Megawatts (MW) was analyzed to determine the optimum mixes of resources, both renewable and conventional. Because the utility currently does not own any generation assets, optimization was achieved by minimizing overall supply costs for various penetration levels of renewable resources while observing restrictions regarding market purchases and error in supply/demand balancing.



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