

**ENSURING RESOURCE ADEQUACY FOR AUSTIN ENERGY:  
FORECASTING DEMAND GROWTH AND MANAGING PEAK LOAD  
THROUGH 2040**

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**ABSTRACT**

Austin Energy (AE), like many utilities across the country, faces the dual challenge of providing reliable and affordable energy to meet growing demand, while also decarbonizing and operating its resources in a warming world. This work presents electricity demand growth forecasts in the AE service area through 2040 based on expected new and expanding load growth profiles and examines how AE can manage that demand while ensuring clean, reliable, and affordable power. I project that demand will be driven by four key factors: population and economic growth, electrification of home heating and cooking, large load growth (e.g., data center expansion), and increased electric vehicle (EV) adoption. This work demonstrates that AE peak demand could grow by 177% by 2040, with growth driven primarily by unmanaged EV charging. I offer three EV charging scenarios to determine the effectiveness of uniform EV charging and find that peak demand can be reduced 60% with the adoption of smart-charging technologies or time-of-use rates. Finally, I assess AE's current and future generating capacity, including the expiration of power purchase agreements, to evaluate the power required to meet customer demand and propose both supply- and demand-side solutions to ensure resource adequacy.

A handwritten signature in black ink, appearing to read "Michael Webber", is written over a horizontal line.

**Dr. Michael Webber**