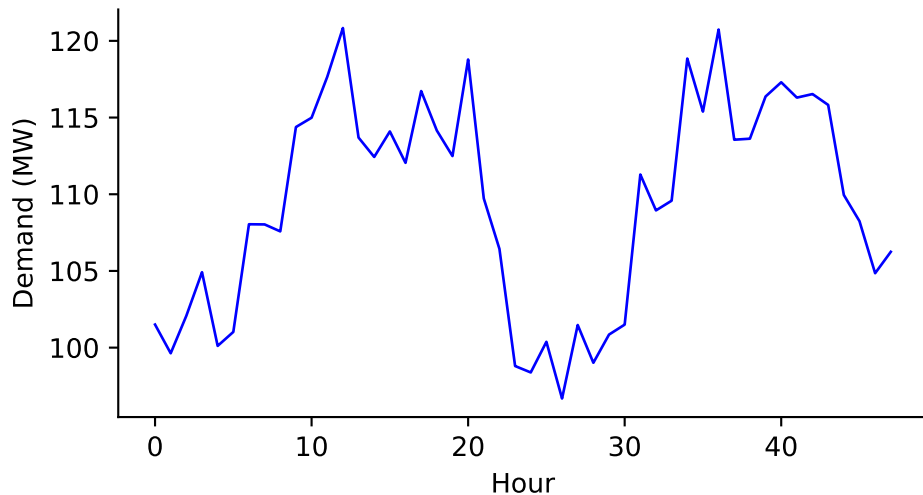
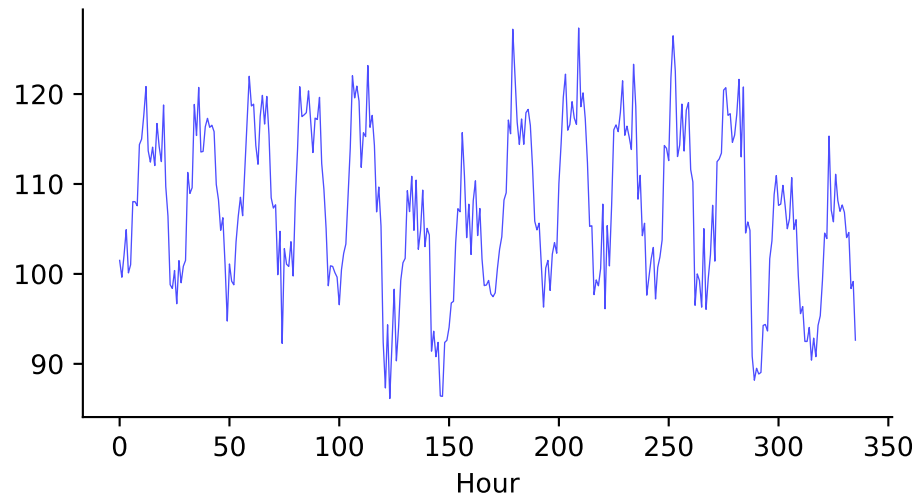


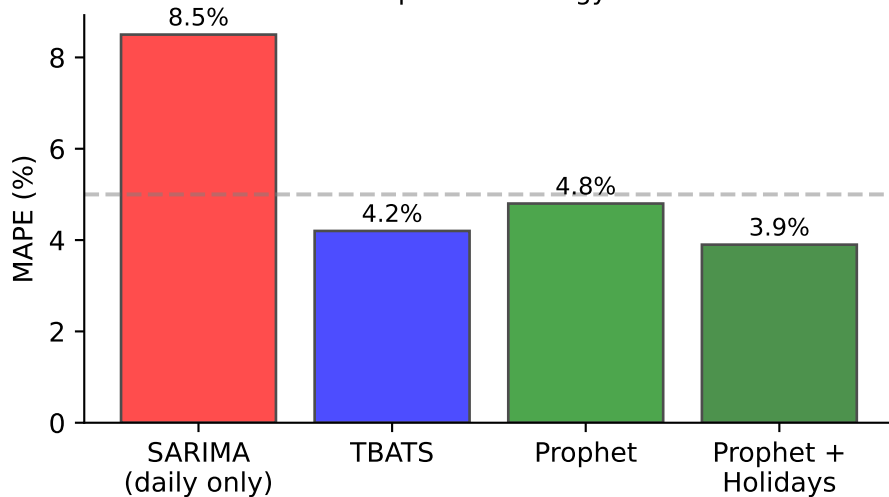
First 2 Days: Daily Pattern Visible



Full 2 Weeks: Weekly Pattern Visible



Model Comparison: Energy Demand



Key Insights:

1. SARIMA with $s=24$ misses weekly pattern
→ Higher error (MAPE = 8.5%)
2. TBATS and Prophet capture both daily AND weekly seasonality
→ Much better (MAPE ~ 4-5%)
3. Prophet + holidays adds value when special days matter
→ Best result (MAPE = 3.9%)

Conclusion: Multiple seasonality models significantly outperform single-seasonality SARIMA!