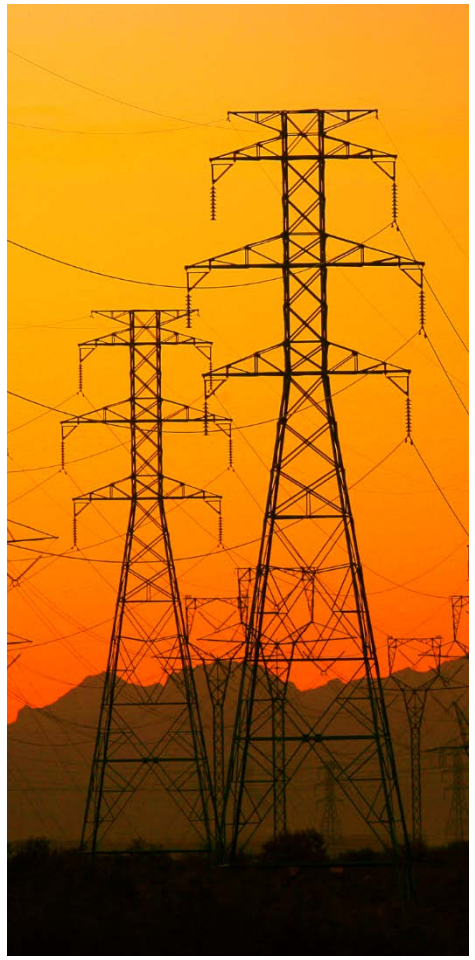
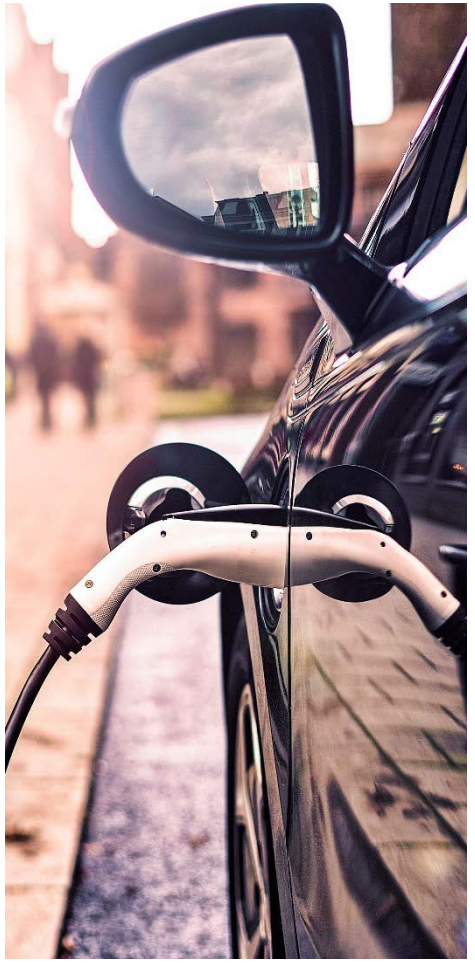


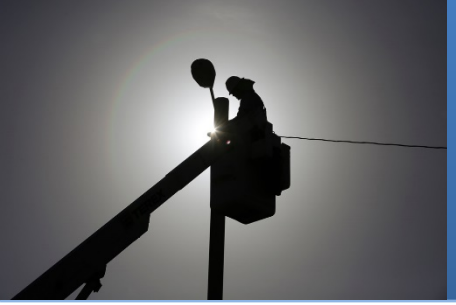
TEP Integrated Resource Plan Load Forecast

Tucson Electric Power

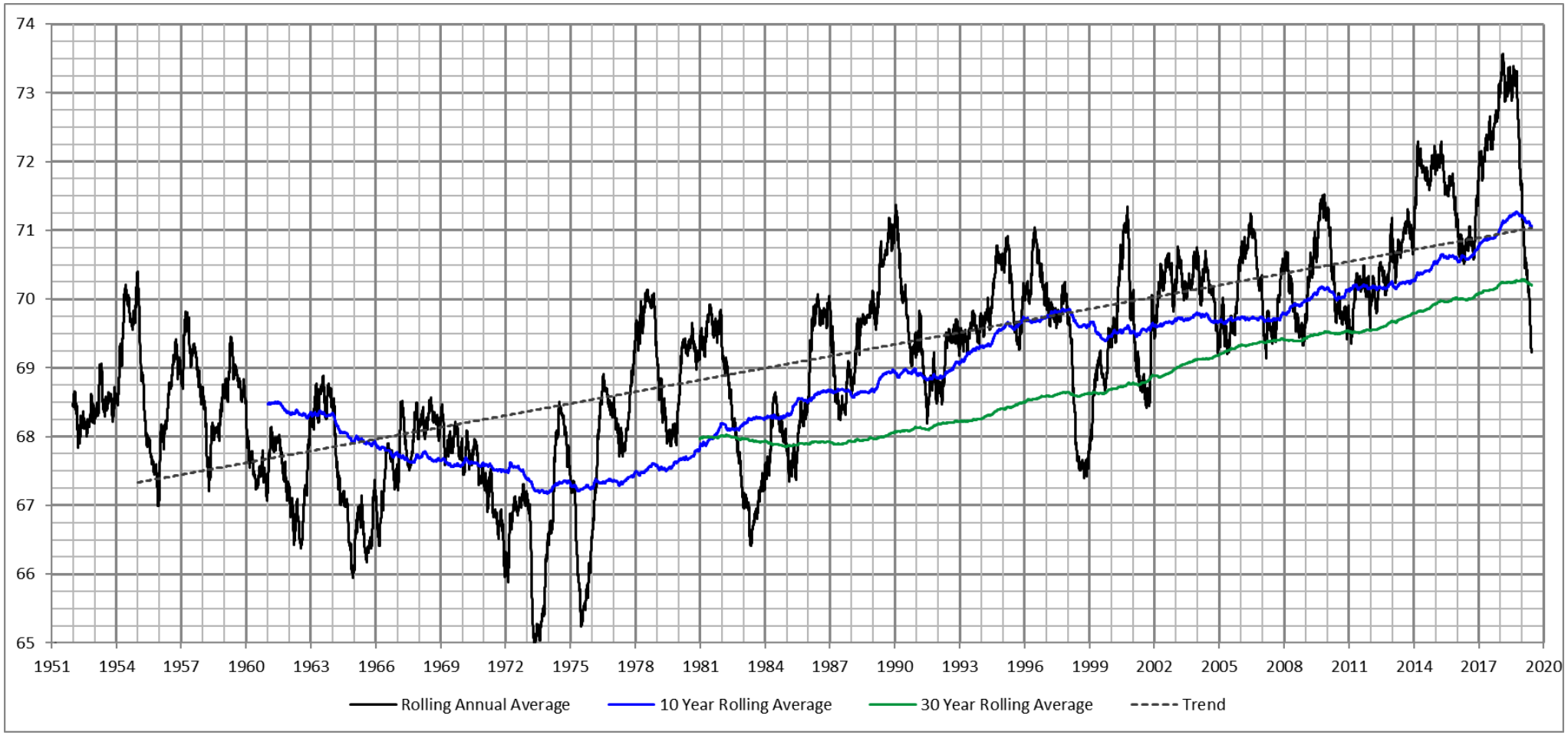
Advisory Council Meeting

Greg Strang, Lead Forecast Analyst

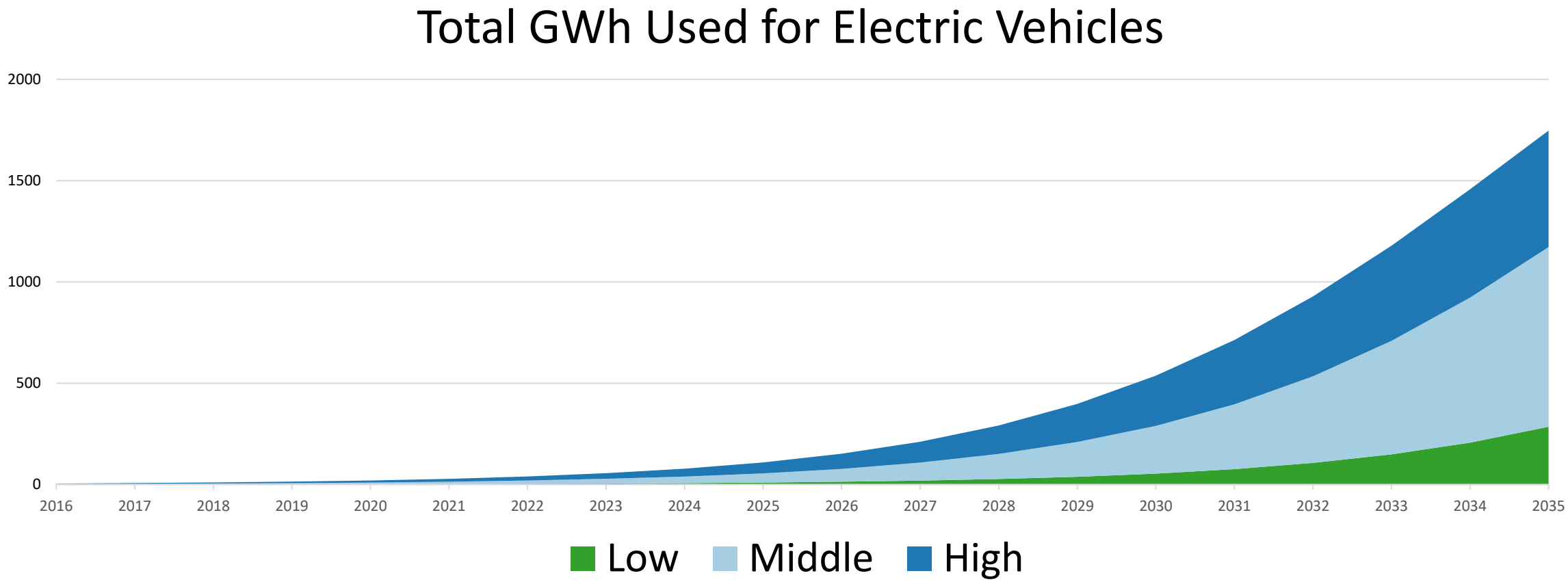
June 20, 2019



Changes From Prior IRP, Weather Trend Adjustment



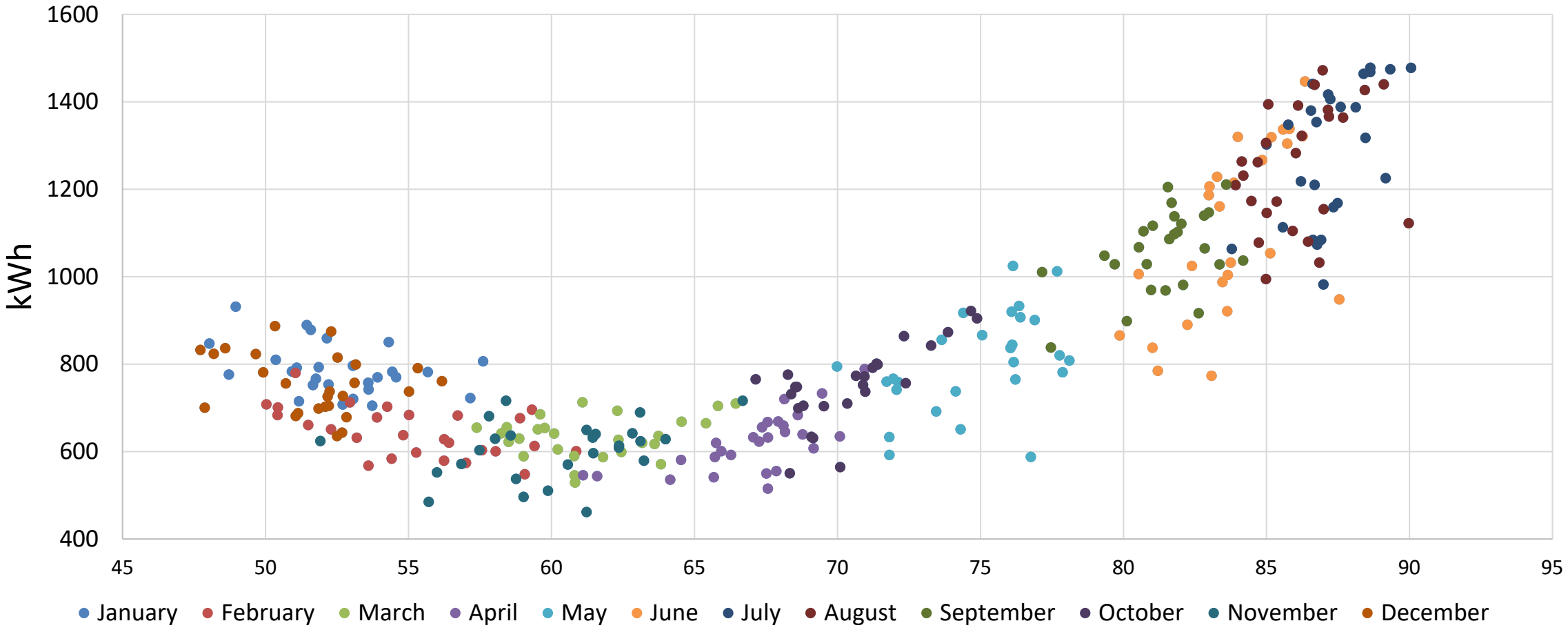
Changes from Prior IRP, Electric Vehicles



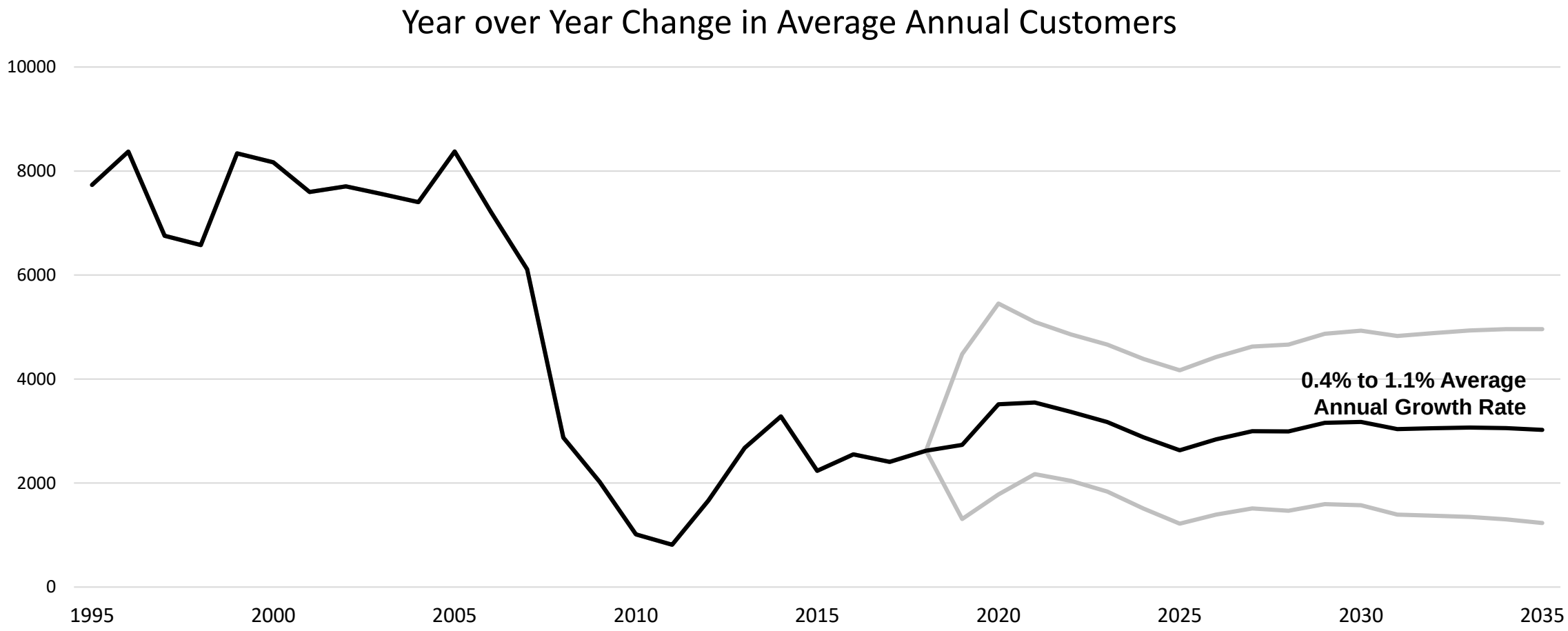
Forecast Overview

- Energy, Peak, and Customer forecast
- The forecast period runs from 2019-2035
- Wherever possible, the forecast relies on sound statistical practice and shuns personal judgments
- Bottom up forecast
- Forecast accounts for Weather, Economic, and Seasonal variables

Residential Use Per Customer by Temperature

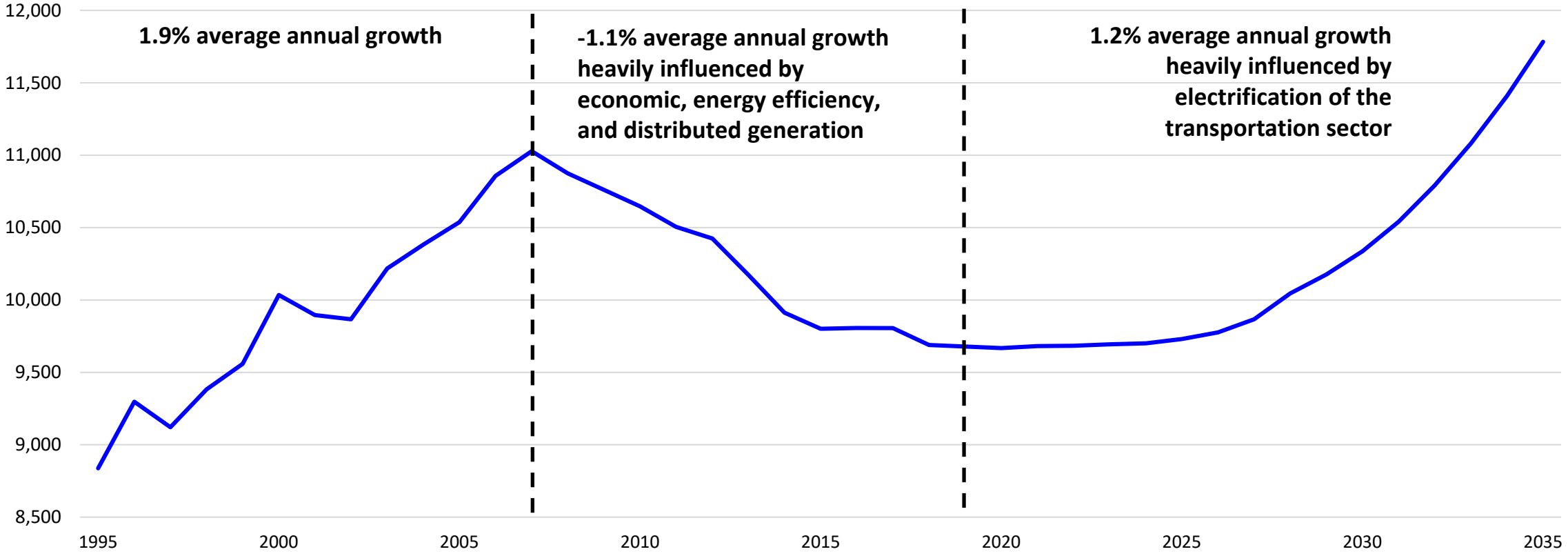


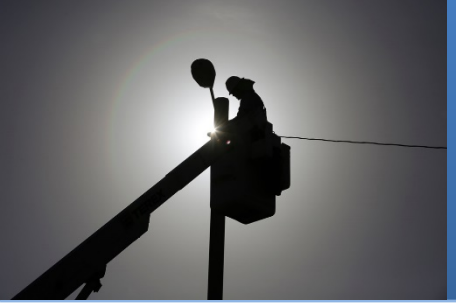
Residential Customer Growth



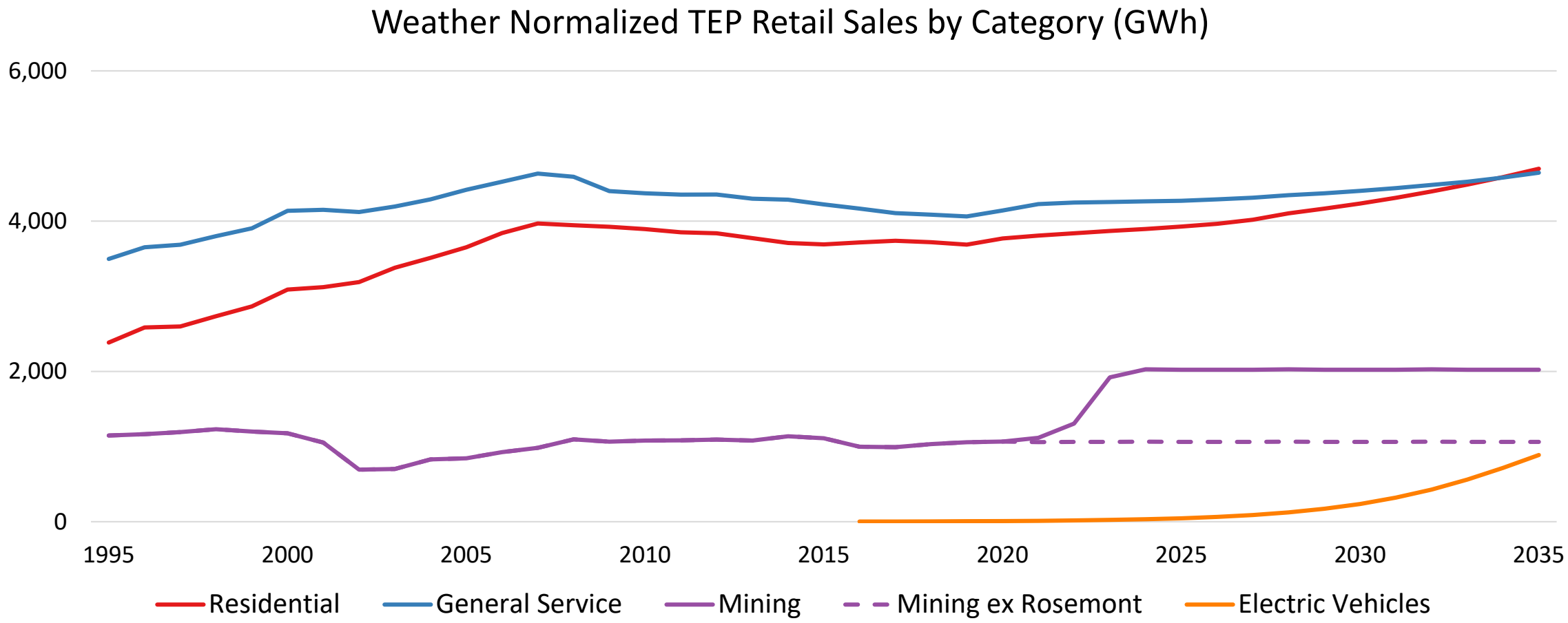
Residential Use Per Customer

Weather Normalized Annual UPC (kWh)



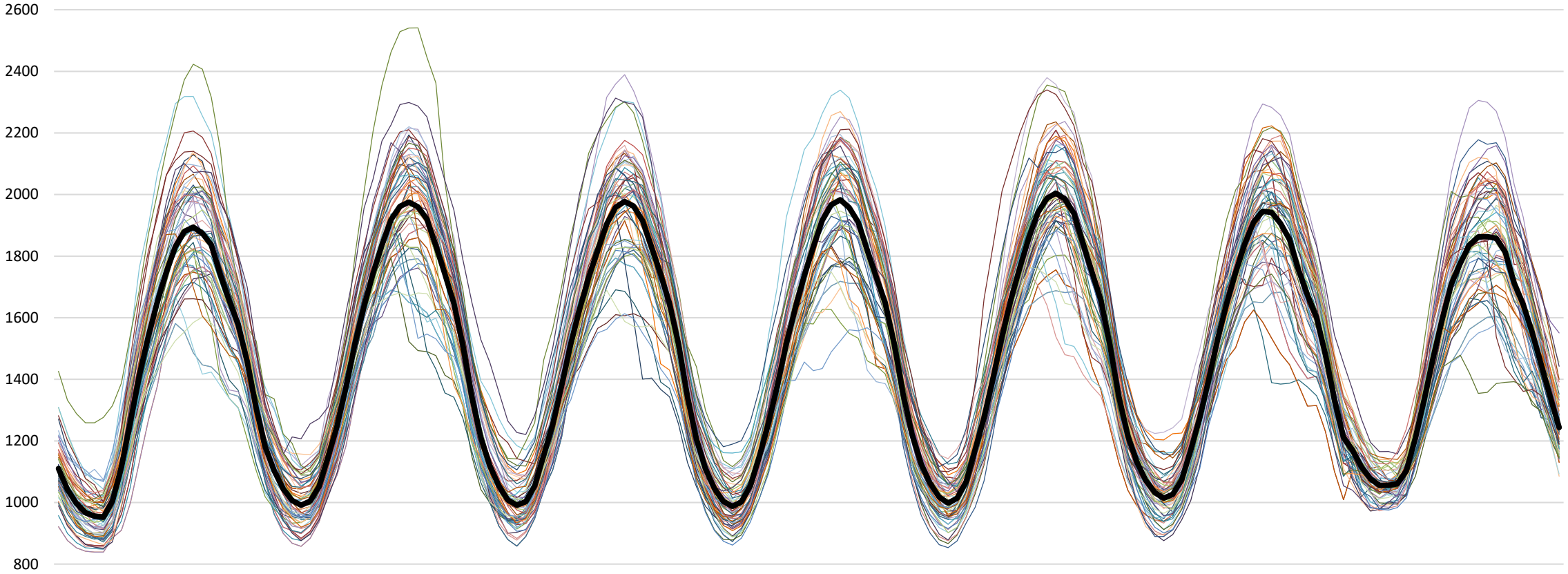


Total Sales

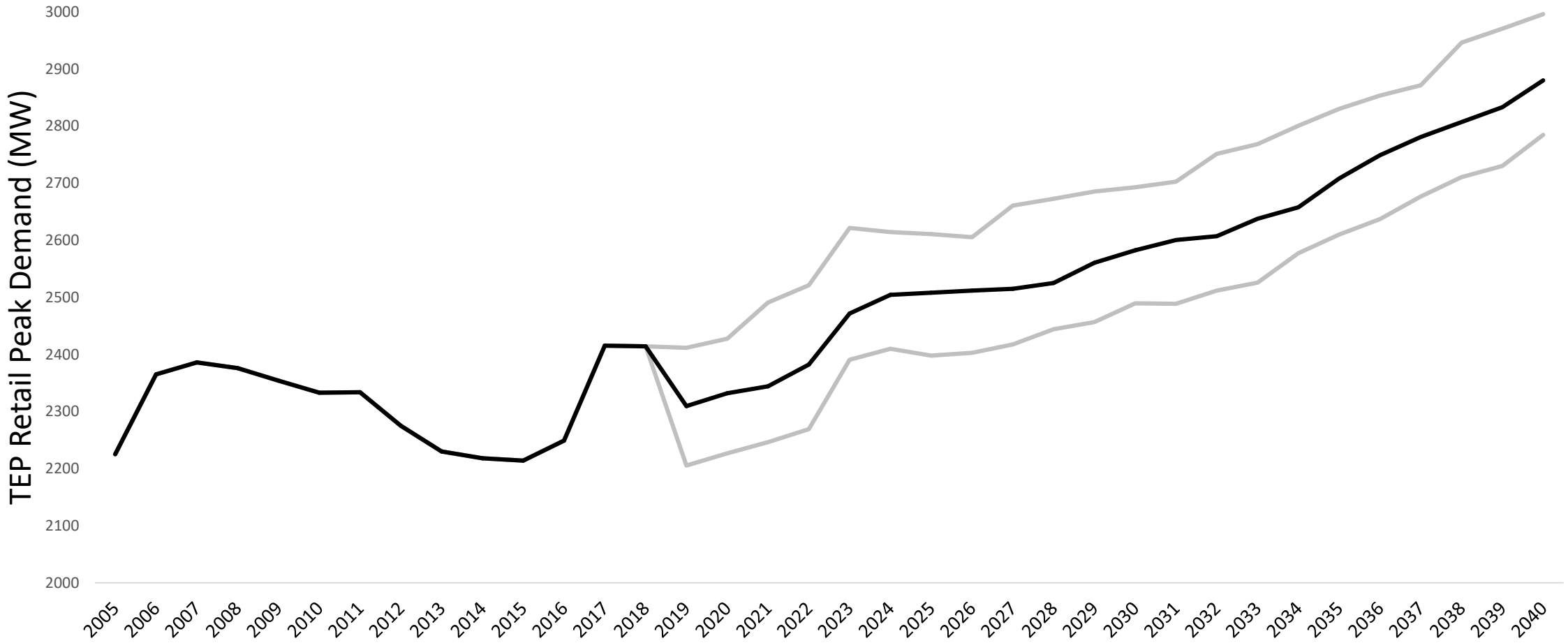

Weather Normalized TEP Retail Sales by Category (GWh)
6,000
4,000
2,000
0
1995
2000
2005
2010
2015
2020
2025
2030
2035
Residential
General Service
Mining
Mining ex Rosemont
Electric Vehicles

Peak Forecast

TEP 6/28/2020-7/4/2020 Hourly Forecast Scenarios (MW)



Peak Forecast



Historical Forecast Performance

- "Prediction is very difficult, especially about the future."

  --Niels Bohr (maybe)

- The Company evaluates forecast performance on a monthly basis
- Through this process we have identified what are the causes of the majority of forecast error
  - In the medium term, weather drives the forecast variance
  - In the long term, errors in economic forecasts drive the variance