UNS Energy Corporation
A Fortis Company

Forecast Methodology & Results

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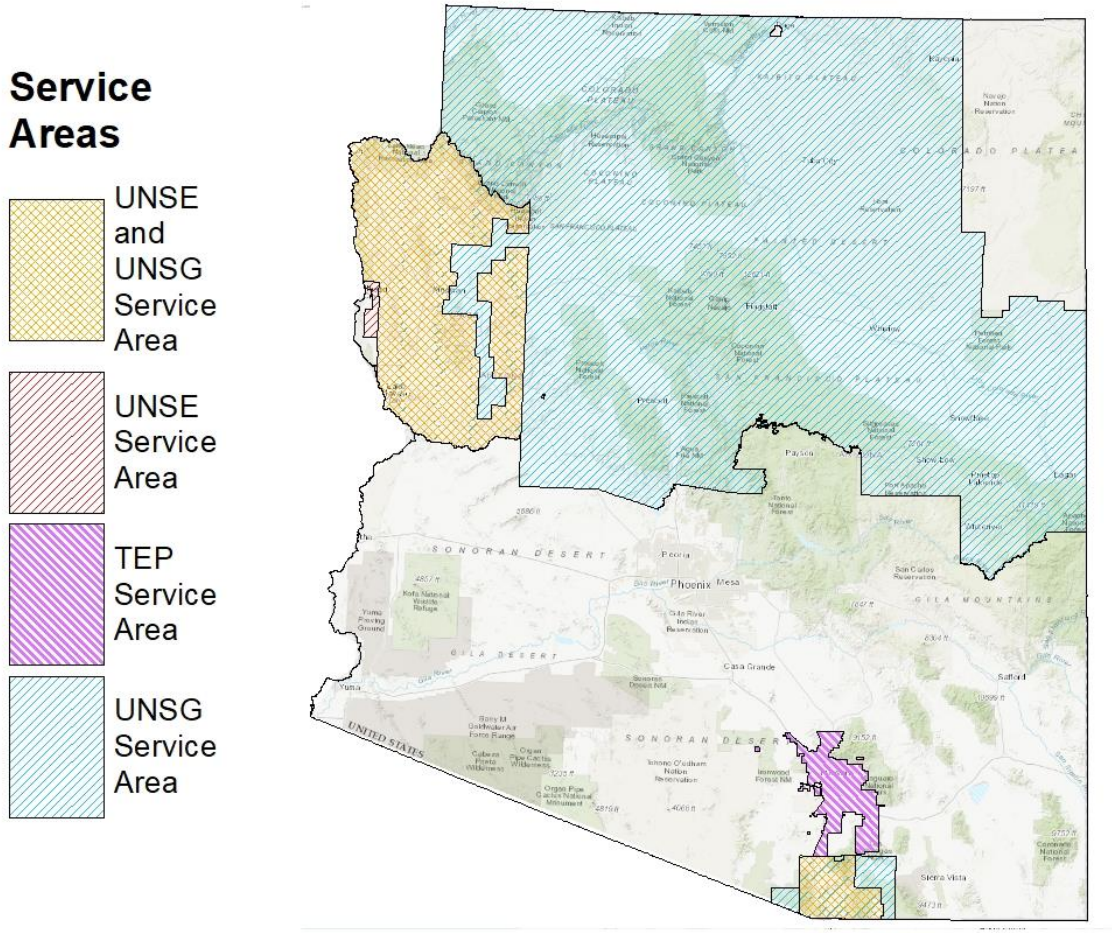
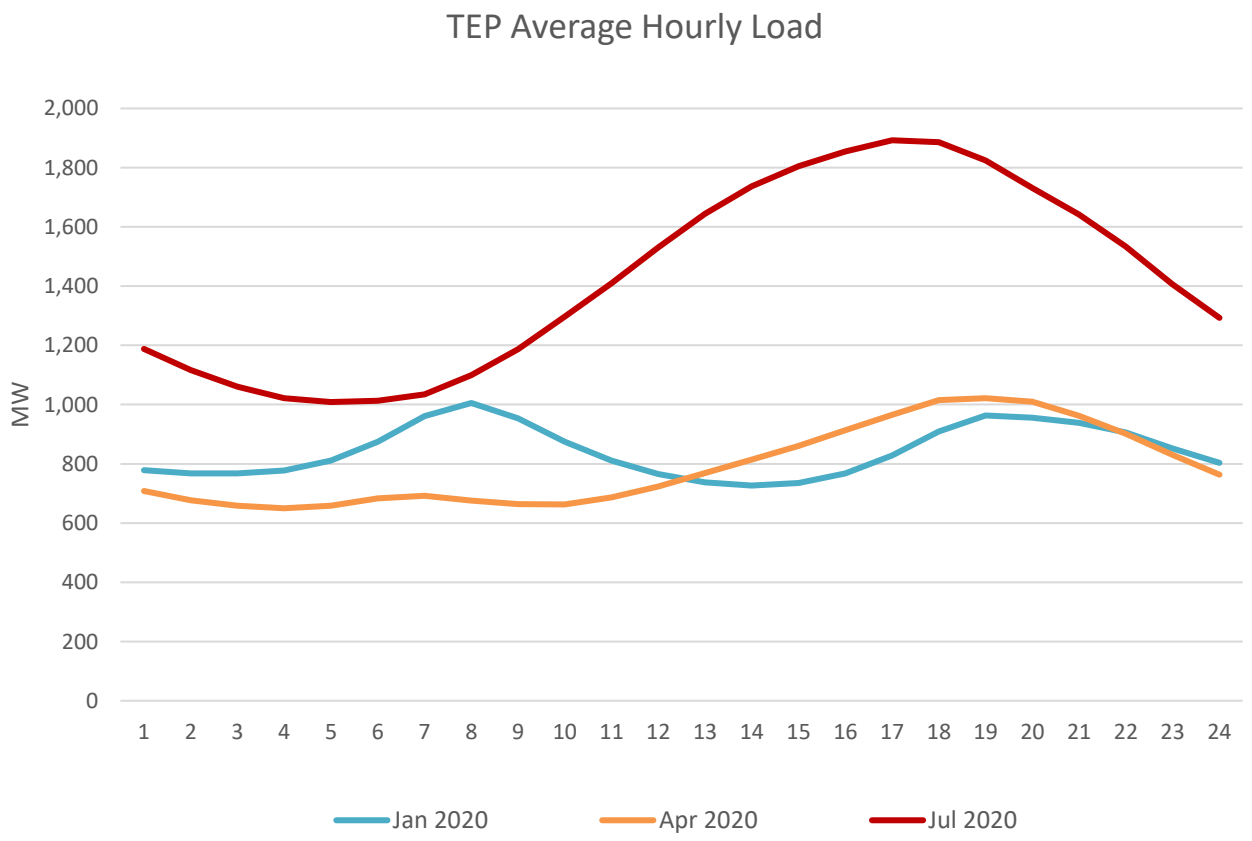
Forecast Overview

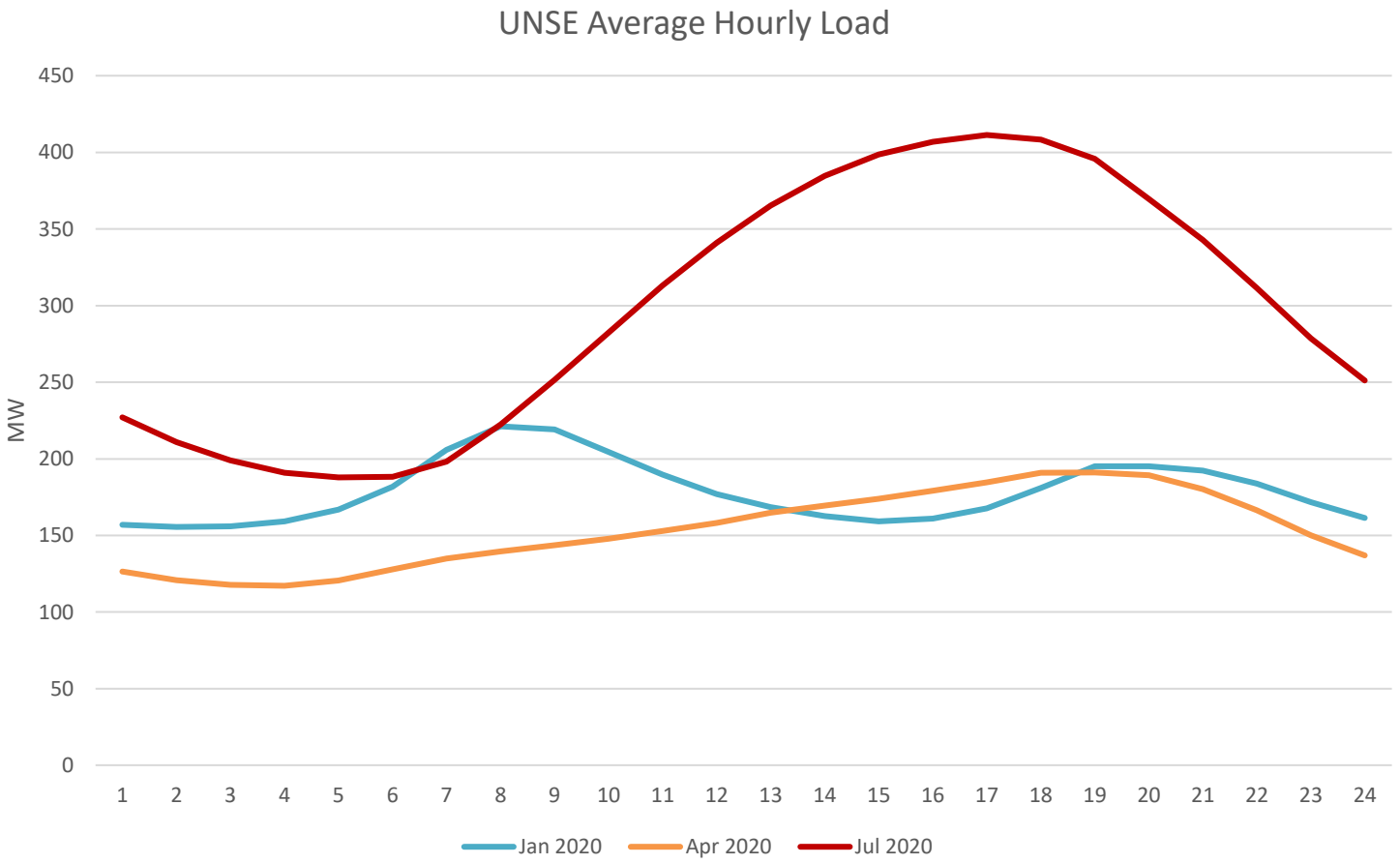
- TEP, UNSE, and UNSG Energy, Peak, Customer
  - 7 distinct geographical regions with different economies and weather
  - 3 Companies with different tariff structures and customer class definitions



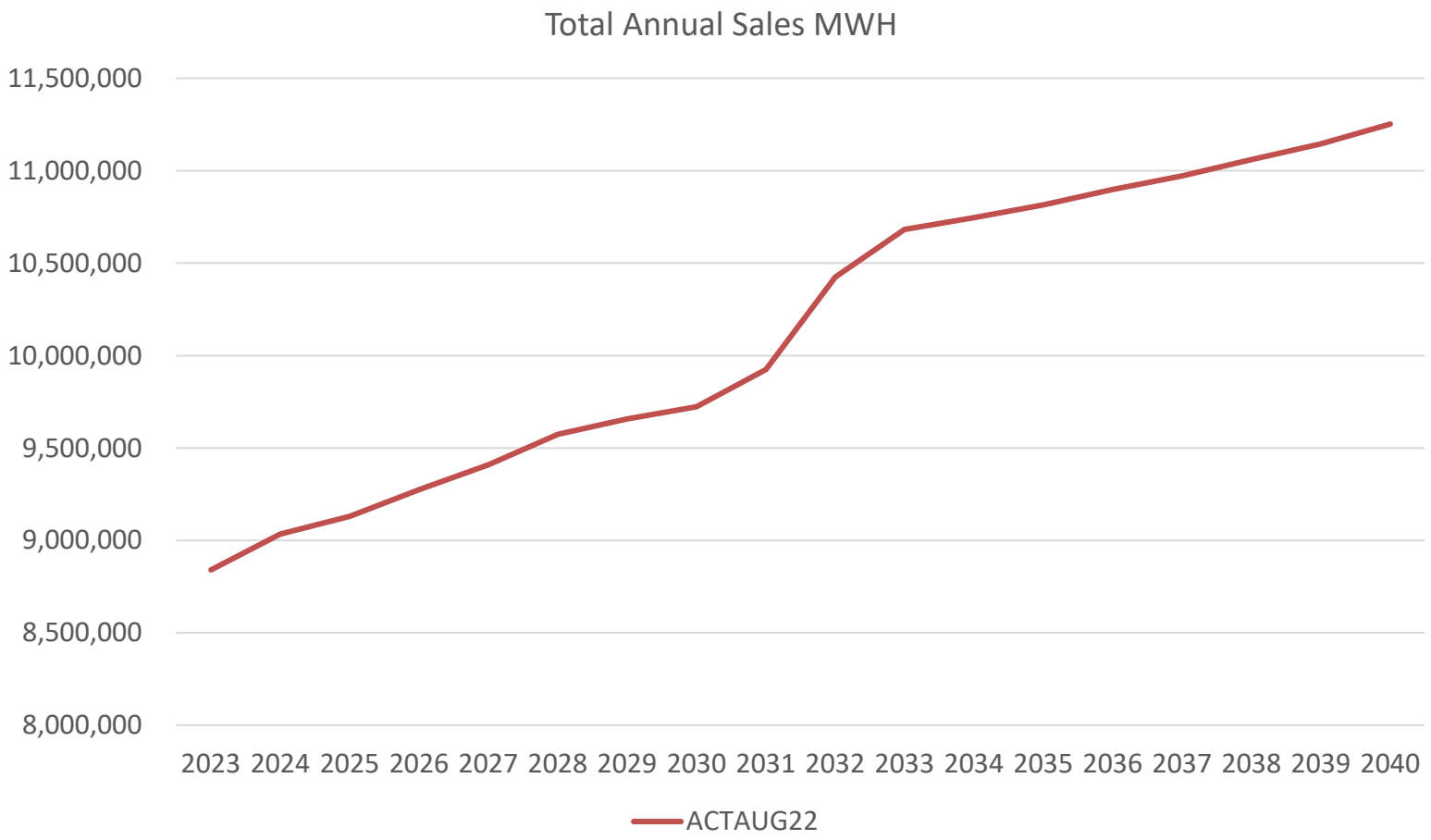
Load Curves


TEP Average Hourly Load
MW
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Jan 2020
Apr 2020
Jul 2020

Load Curves


UNSE Average Hourly Load
MW
450
400
350
300
250
200
150
100
50
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Jan 2020
Apr 2020
Jul 2020

TEP Total Sales



- Residential & Commercial Sales = UPC (Use per Customer) * Customer count
- Large customers modelled separately
- Incremental DG & DSM accounted for

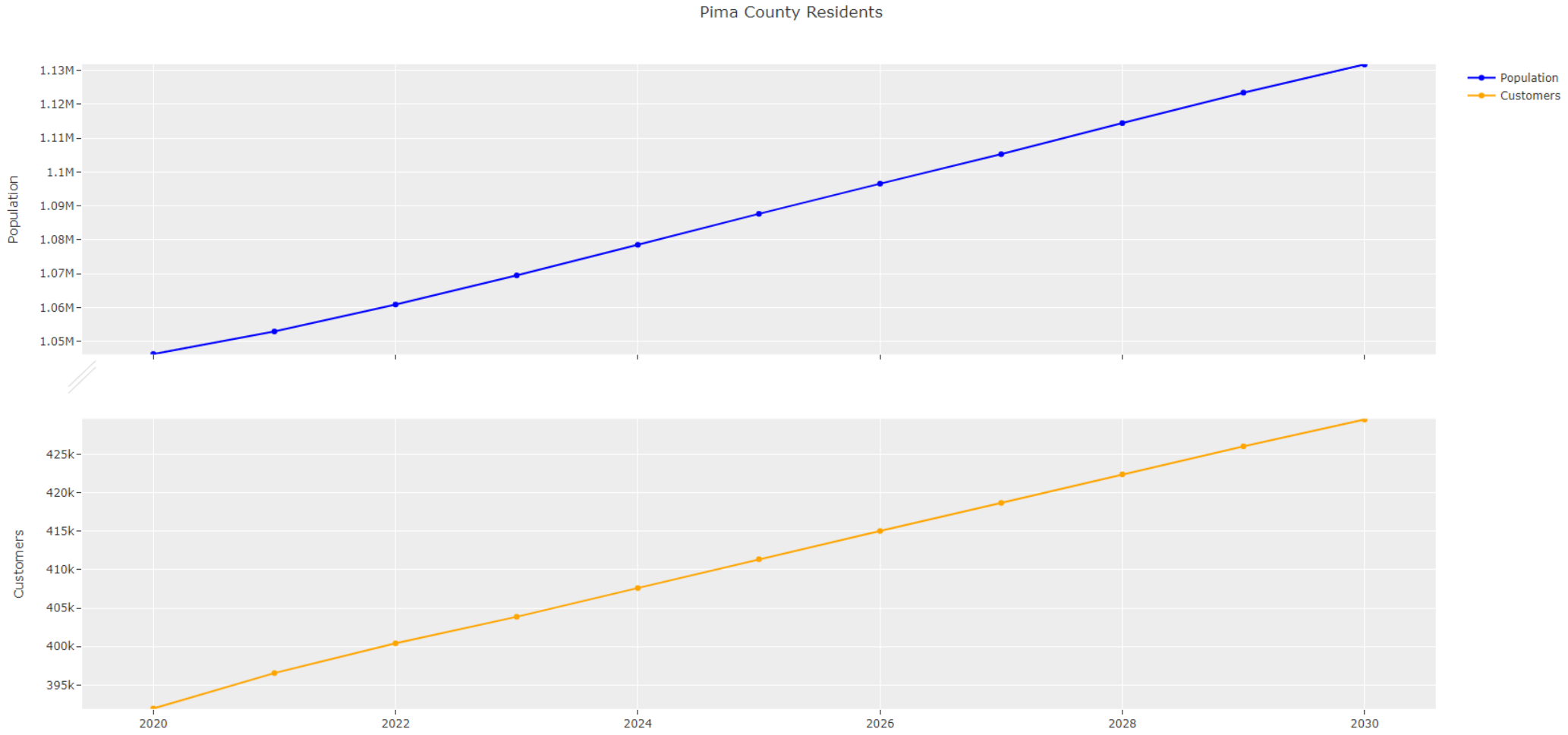
Model Drivers

- Customer forecast:
  - The residential customer forecast is based on estimated Pima County population growth
    - Major sources are; IHS Global Insight and the University of Arizona Forecasting Project
  - Commercial customer forecast is based on Pima population and residential customer forecast
- UPC:
  - UPC regressed on weather vars, employment, and real personal income
- DSM (Demand Side Management)
  - Guidehouse delivered annual DSM saving targets to match 1.3% of prior year sales
- DG (Distributed Solar Generation)
  - econometric models used for installed capacity

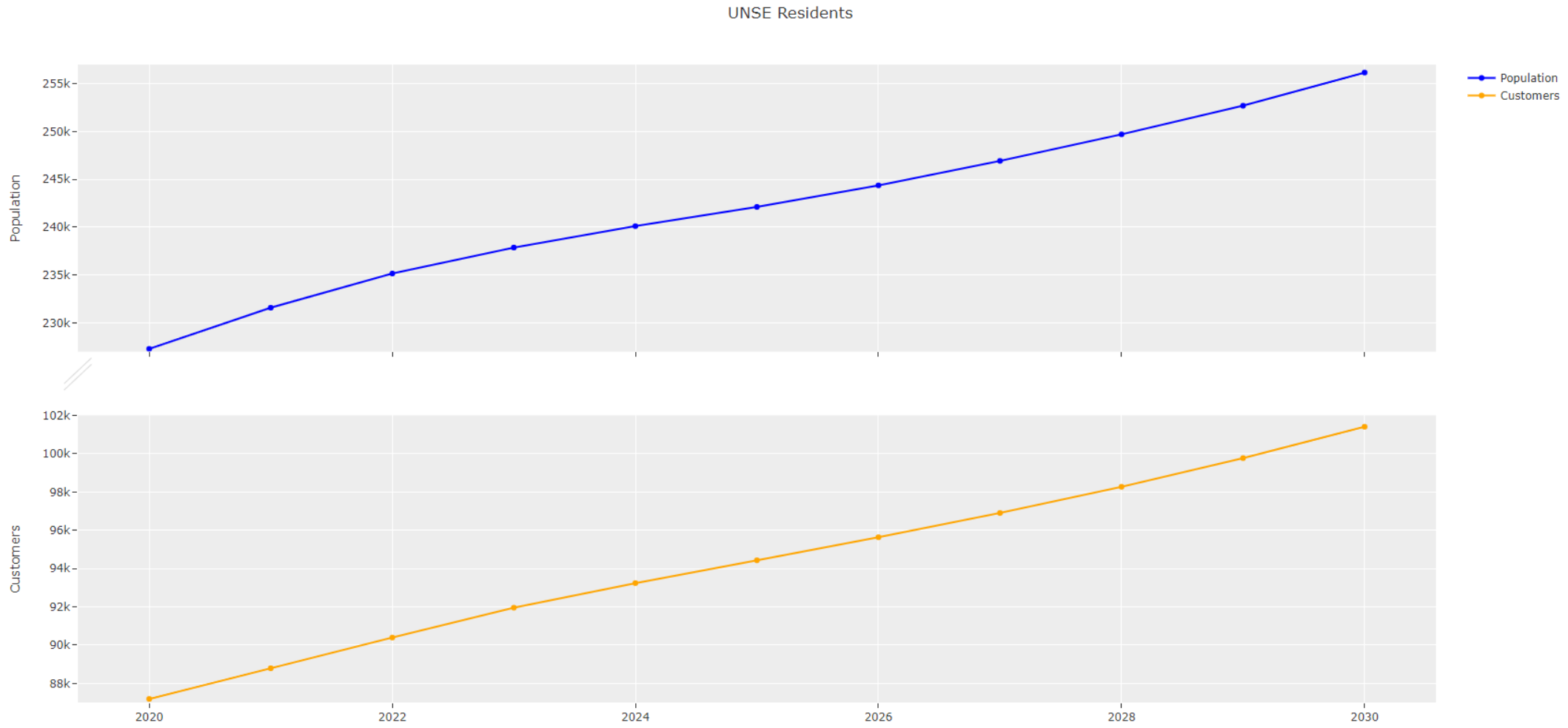
Model Drivers Continued

- Peak Forecast Methodology
  - The peak demand model is based on historical relationships between hourly load, weather, calendar effects, and sales growth.
- EVs
  - Relies on various forecasts to estimate EV penetration and makes assumptions to more closely related to Pima county:
    - Vehicle turnover
    - Demographics
- Large Customers
  - Inputs include historic usage, customer provide information, and internal company resources working closely with the individual customers

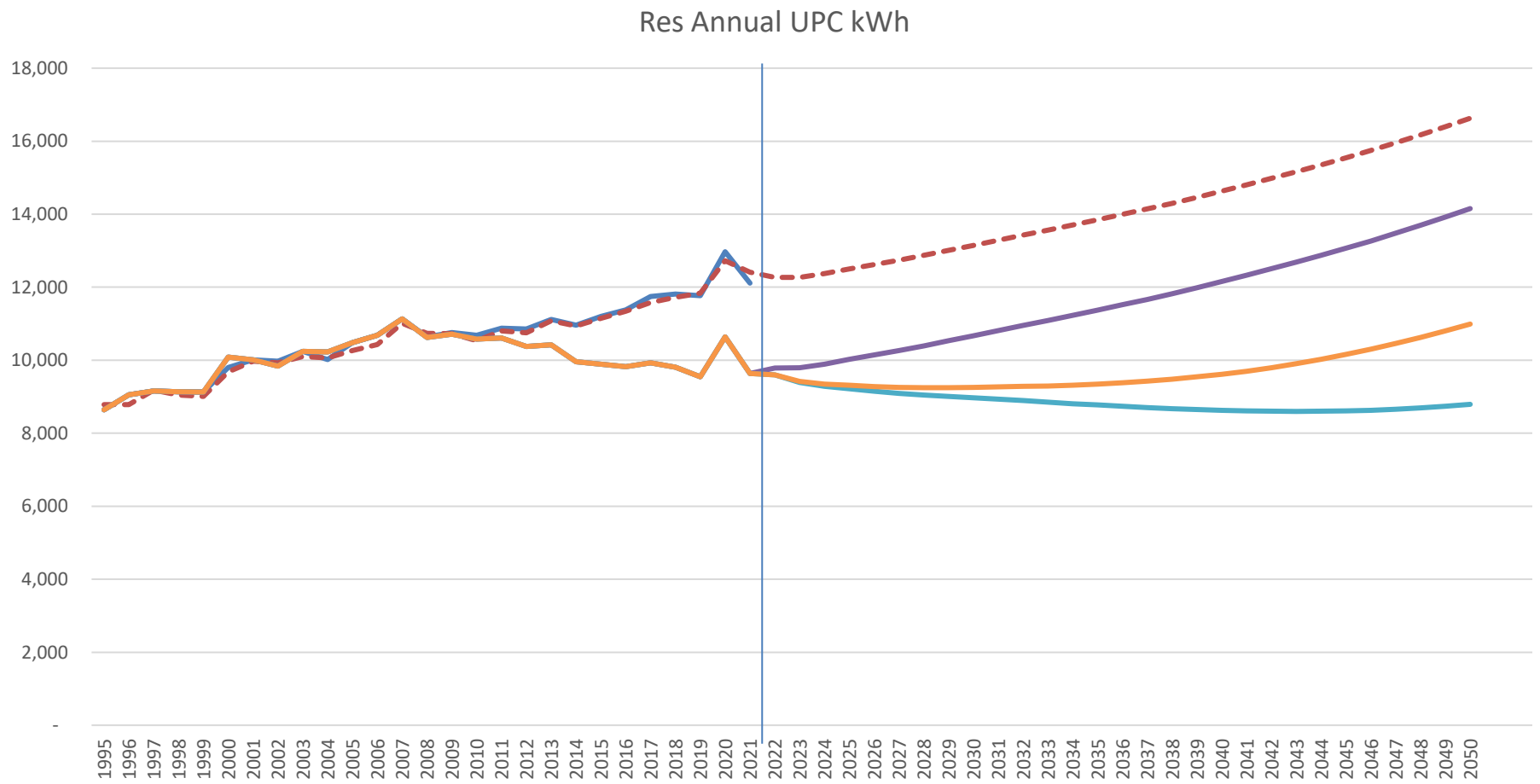
Population Growth Assumptions TEP



Population Growth Assumptions UNSE



Residential kWh UPC at Meter TEP



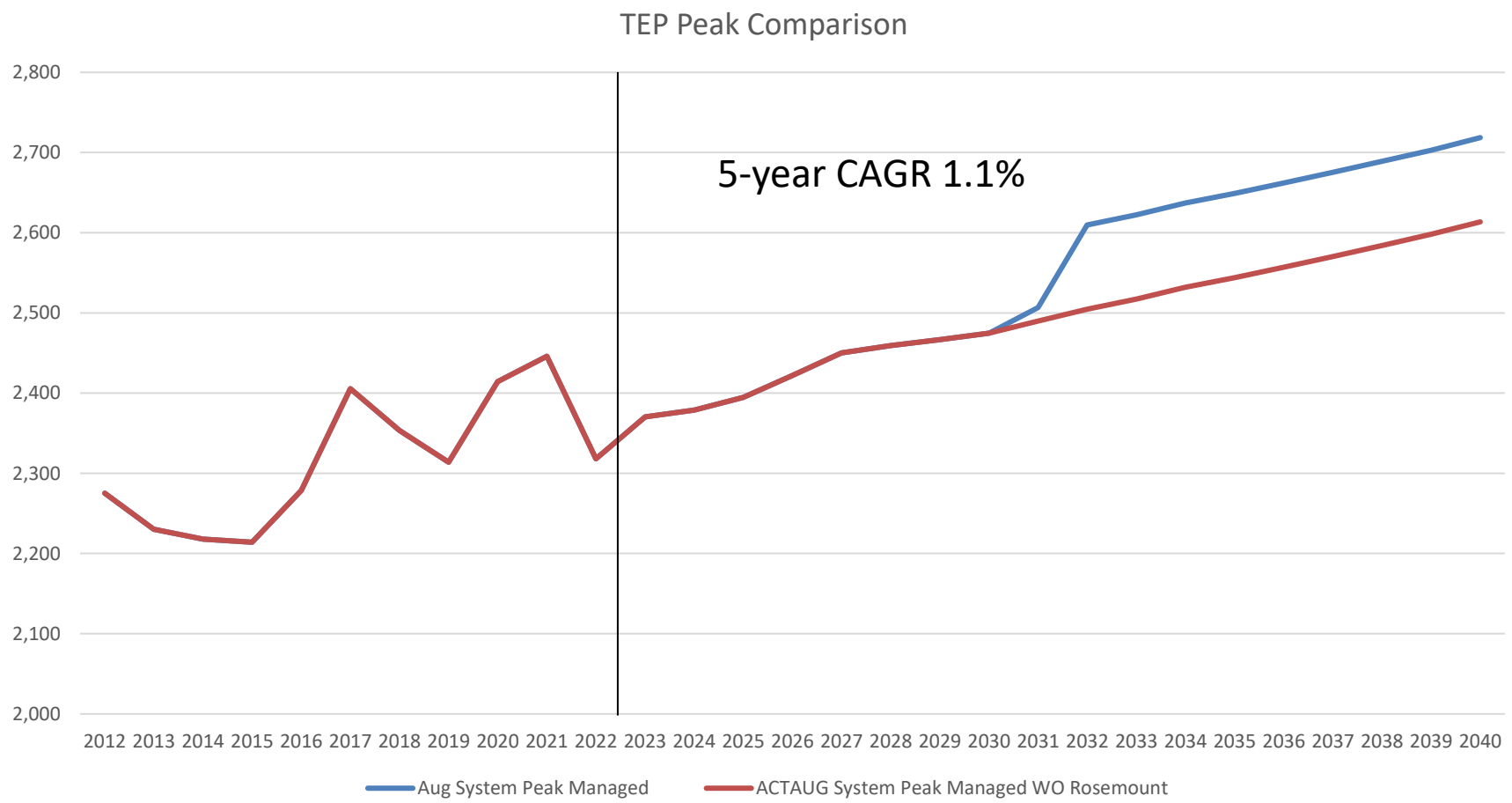
True BAU (No DG and DSM

BAU (DG & DSM through 2021)

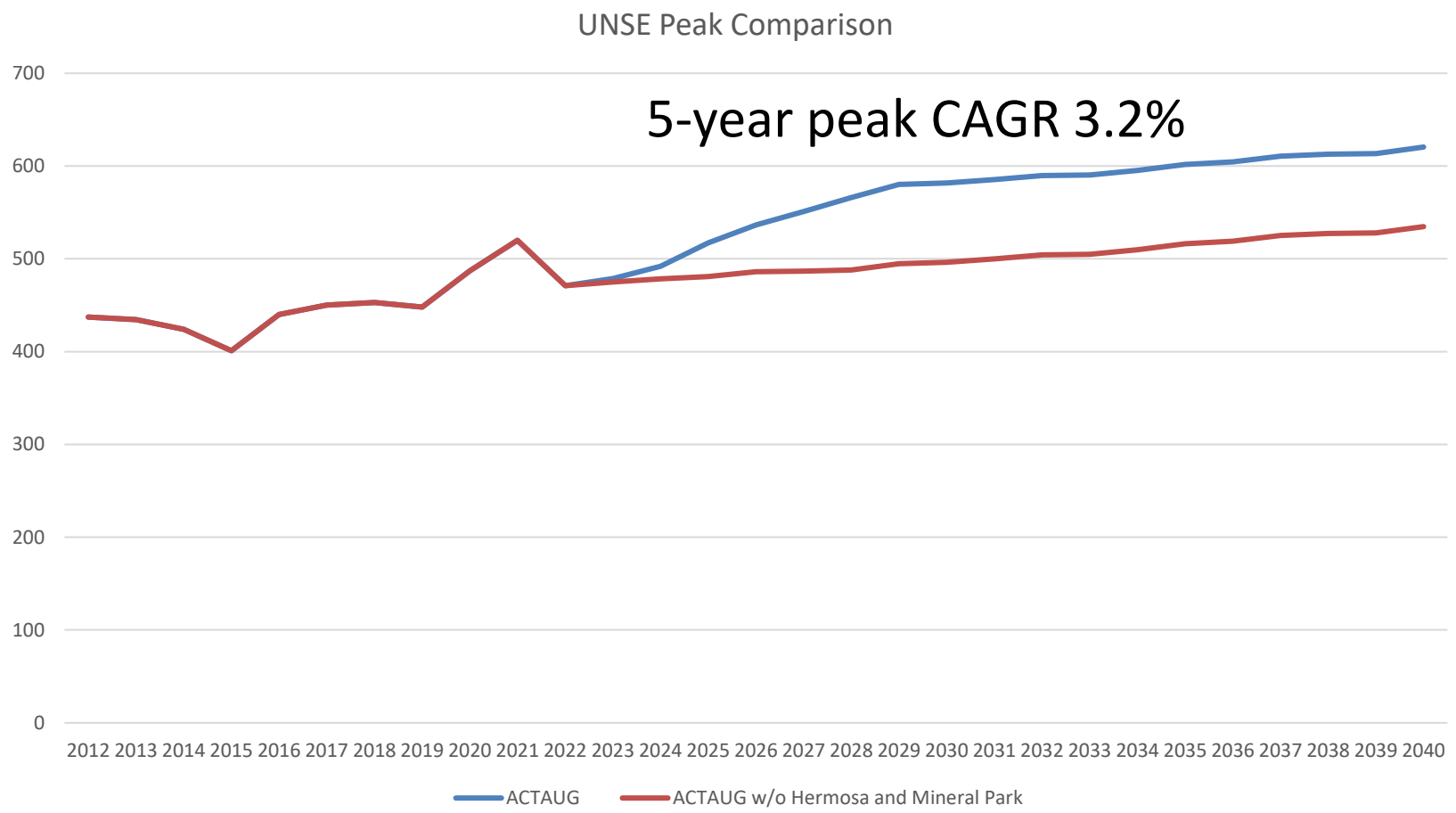
BAU - DG - DSM + EV

BAU - DG - DSM

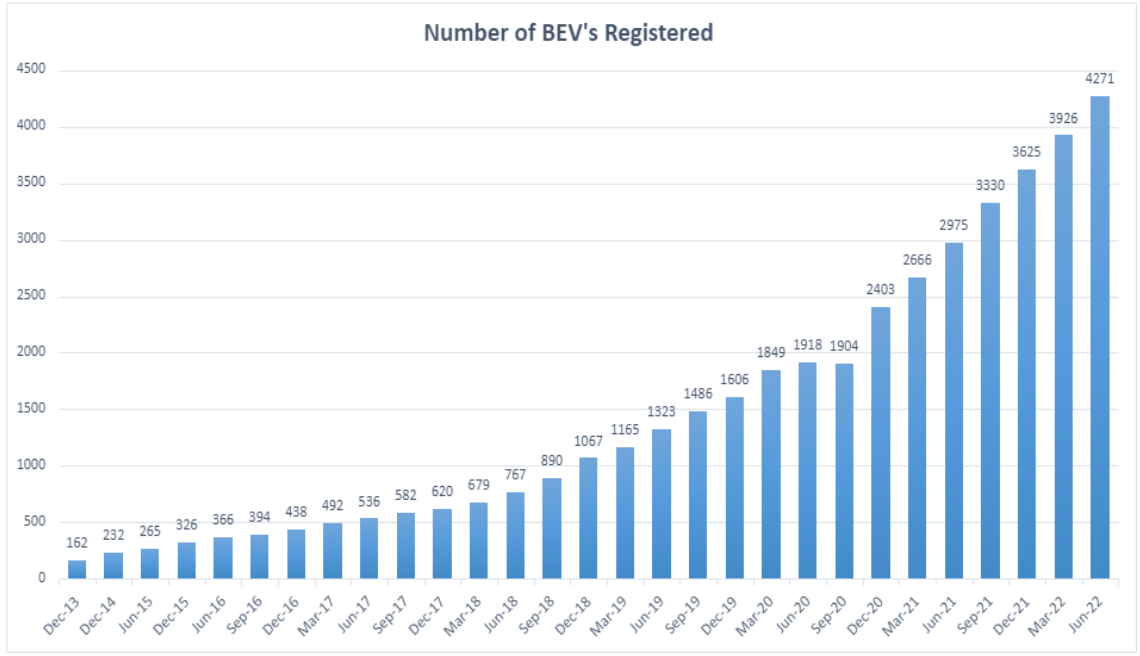
TEP Peak Forecast (MW)

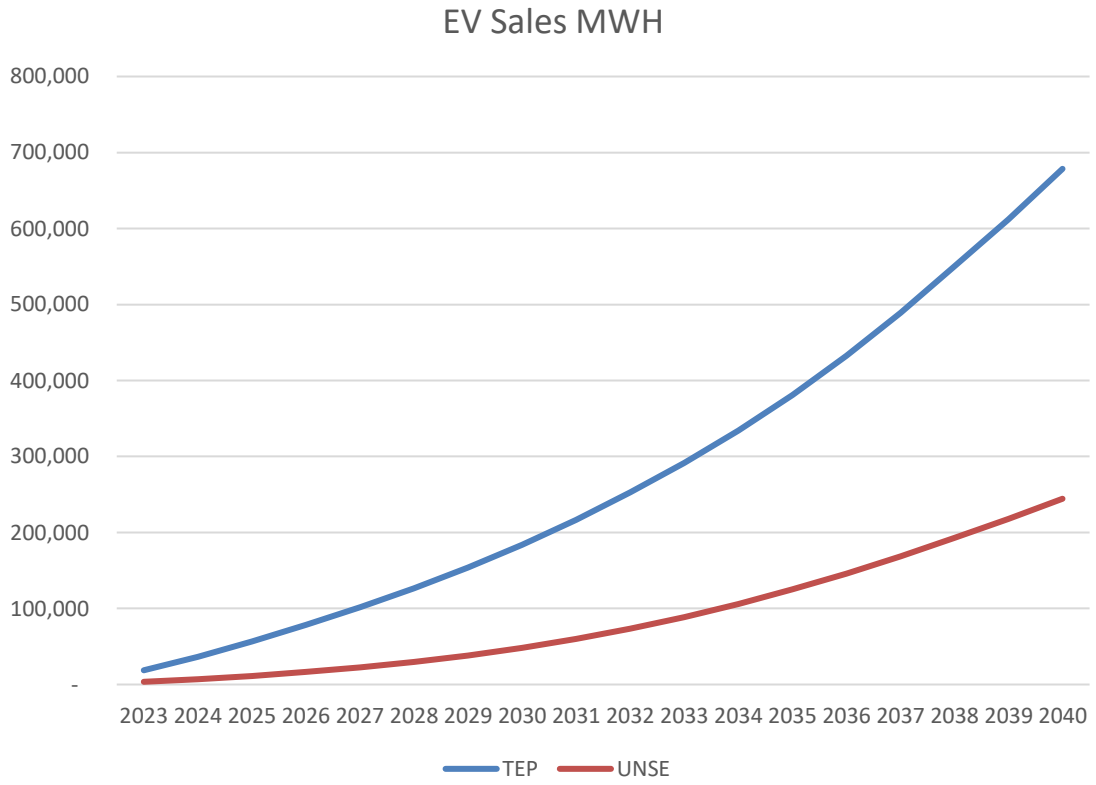


UNSE Peak Forecast (MW)

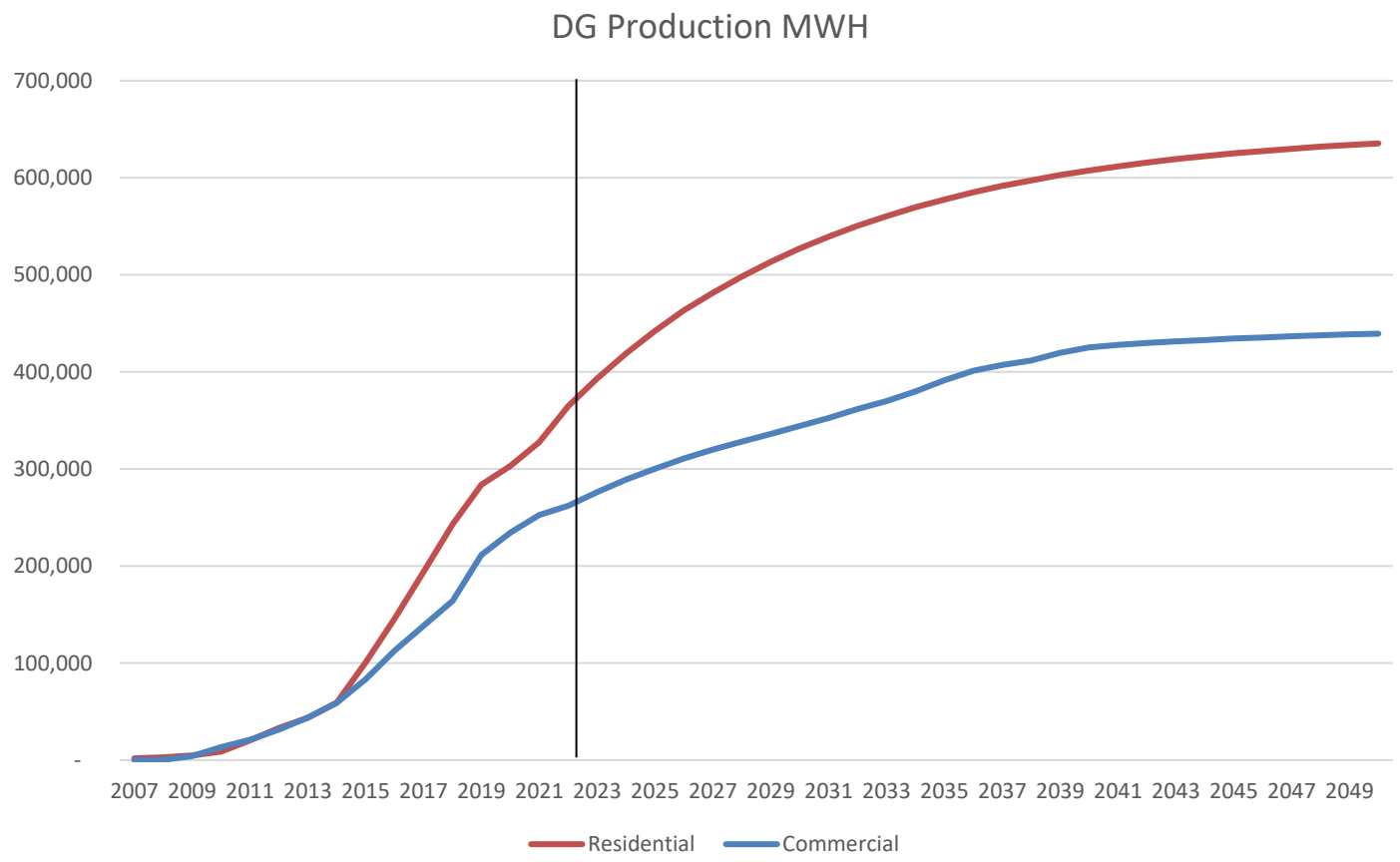


Electric Vehicle Sales Forecast





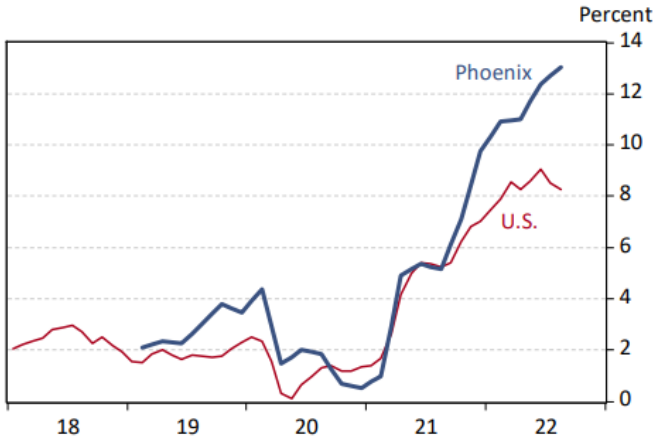
TEP DG Production



Uncertainties

Phoenix Inflation Is Outpacing the U.S.

All-Items CPIU, Over the Year



	August 2022
U.S.	8.3%
Phoenix	13.0%

- Economic Risks
  - Inflation
  - Recessionary risks
  - Adoption of EVs and solar
- Large Customers
  - Large mines and manufacturing do not reach full potential
- How remote work evolves in the future

Next Steps

- Next forecast update by April 2023
- New EV forecast methodology in 2023
  - Great lever for forecast scenario work
- Large Customer Scenarios
- DSM
  - Working with Guidehouse to produce hourly forecast for base scenario (1.3%
    - Can produce different scenarios

Scenarios

Assumptions	Low	Base Case Value ILLUSTRATIVE	High
DSM: % of previous year total customer energy usage	?	1.3% annually for three years	?
DG: Nameplate capacity aditions per month	?	5 MW	?
EVs: Total EV additions by 2038	?	500,000	?
Large Customers: High load factor customers like mines	No Rosemont	Rosemont	Rosemont + ?
Extreme Weather: Peak temperature increase by 2038	0°F	1°F	2°F