

2021 IRP – Sales and Load Forecast



March 11, 2021

Agenda

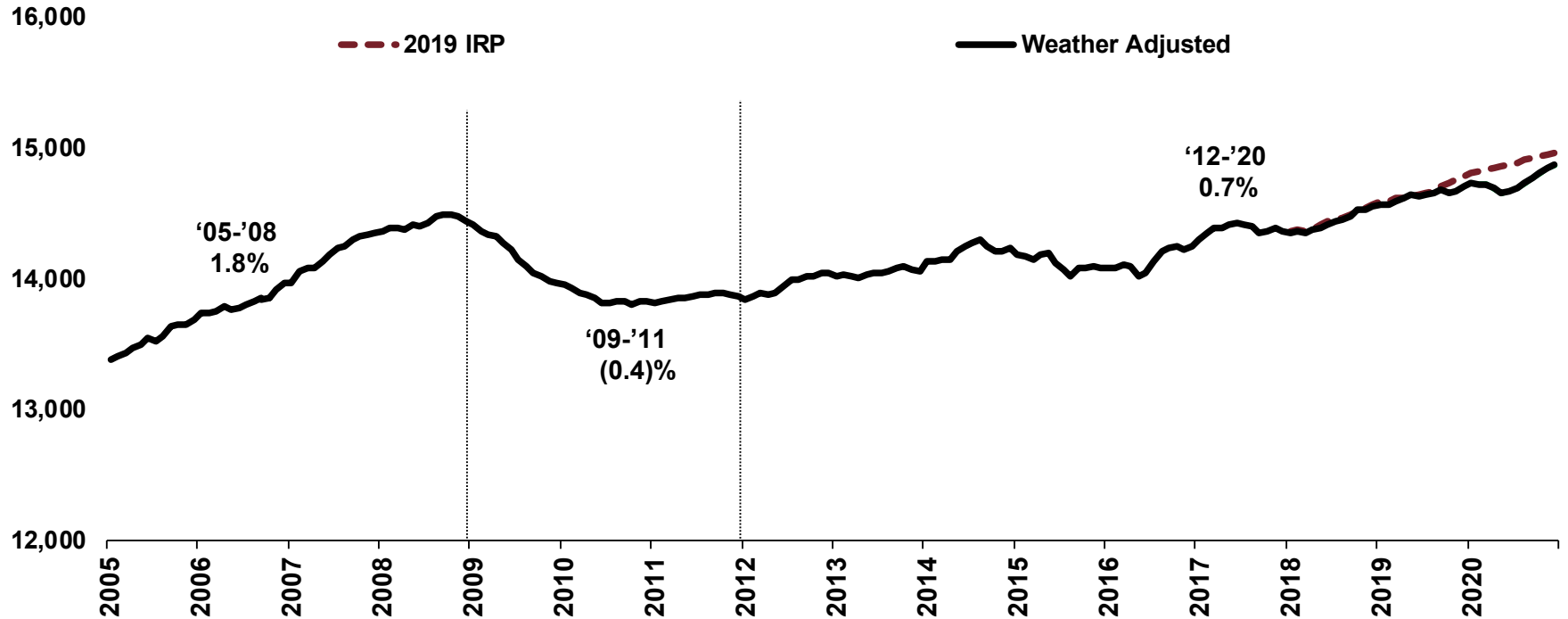
- **Executive Summary**
 - Forecast Results
 - Sales/Peak/Customer Graphics
- **Economic Discussion**
 - Labor
 - Population/Migration/Housing
- **Class Level Results**
 - Residential
 - Commercial and Industrial
 - Irrigation
 - DERs and EVs

ADDITIONAL CONSIDERATIONS

- **Energy Efficiency and Load Forecasting in 2021 IRP (01/12/2021)**
 - Optionality of energy efficiency treatment
- **Load Forecasting Technical Working Group (02/23/2021)**
 - Peak contributions by class
 - Prior IRP sales forecast performance
 - Out of sample, “acid test” results for commercial and industrial, case for non trend stationarity in econometric models
- **Future Discussions**
 - Electrification. Base case load forecast still holds.
 - Solar hosting capacity analysis
 - Indicator variable analysis
 - Impacts of COVID-19

System Sales Historic Results

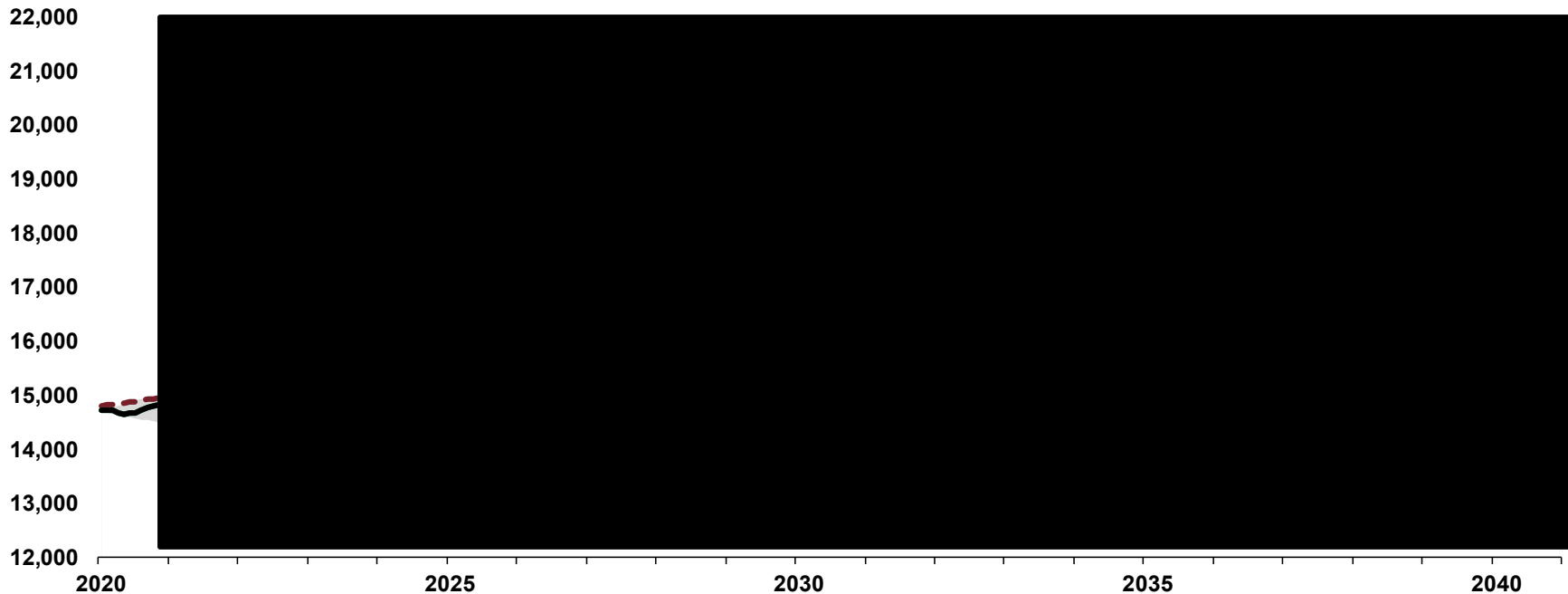
System Sales (000's MWh)



System Sales Forecast Results

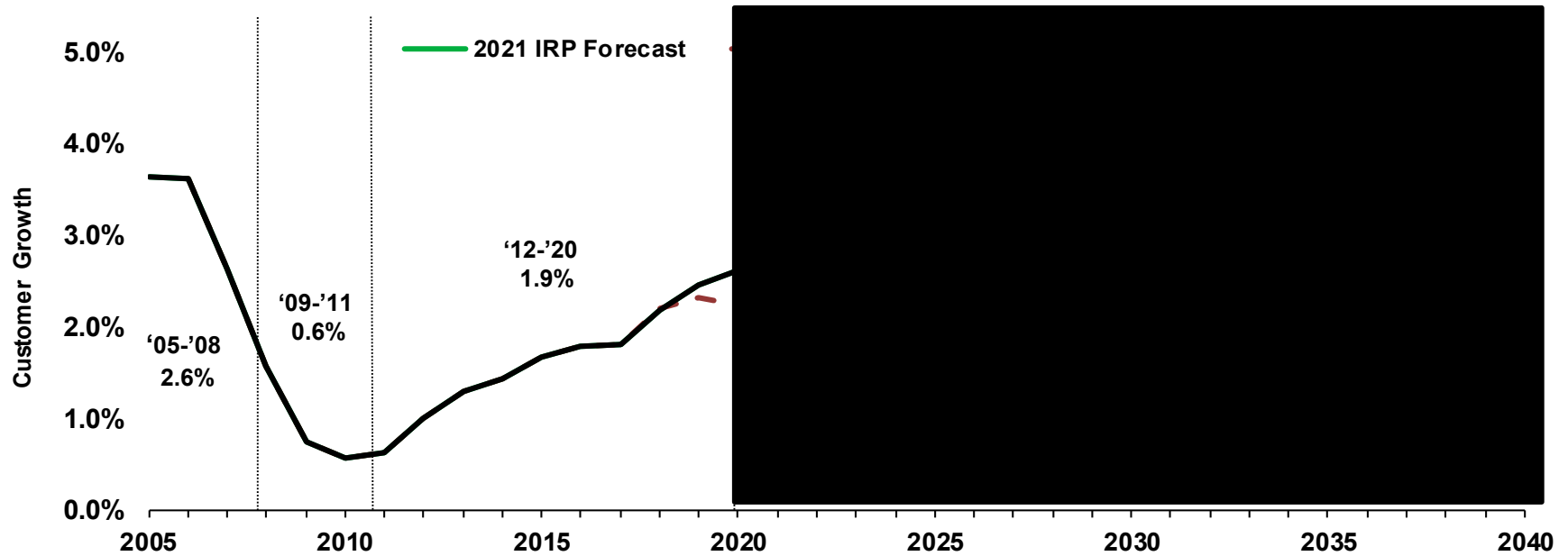
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System Sales (000's MWh)



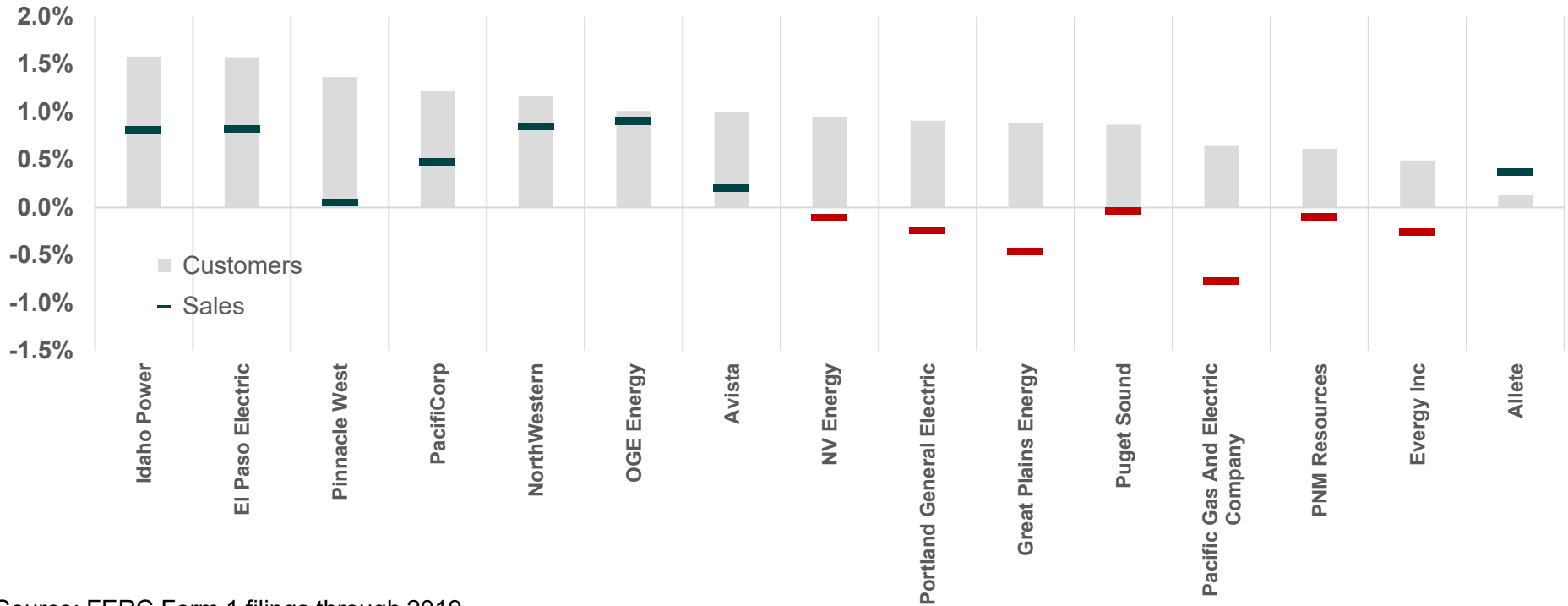
System Customer Forecast

System Customer Growth (12-month change)



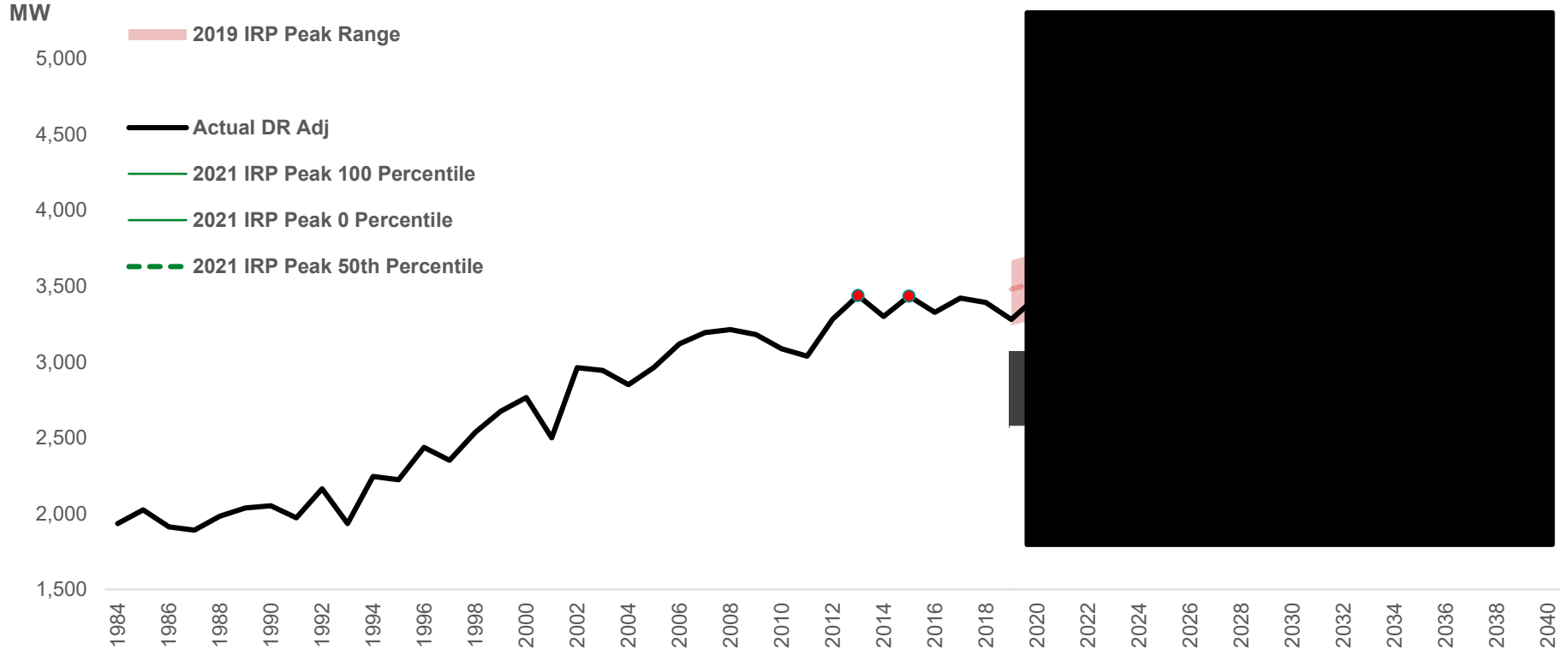
All Growth Is Not Equal

Annual Average System Sales And Customer Growth Since Recession (2010) – Percent Change



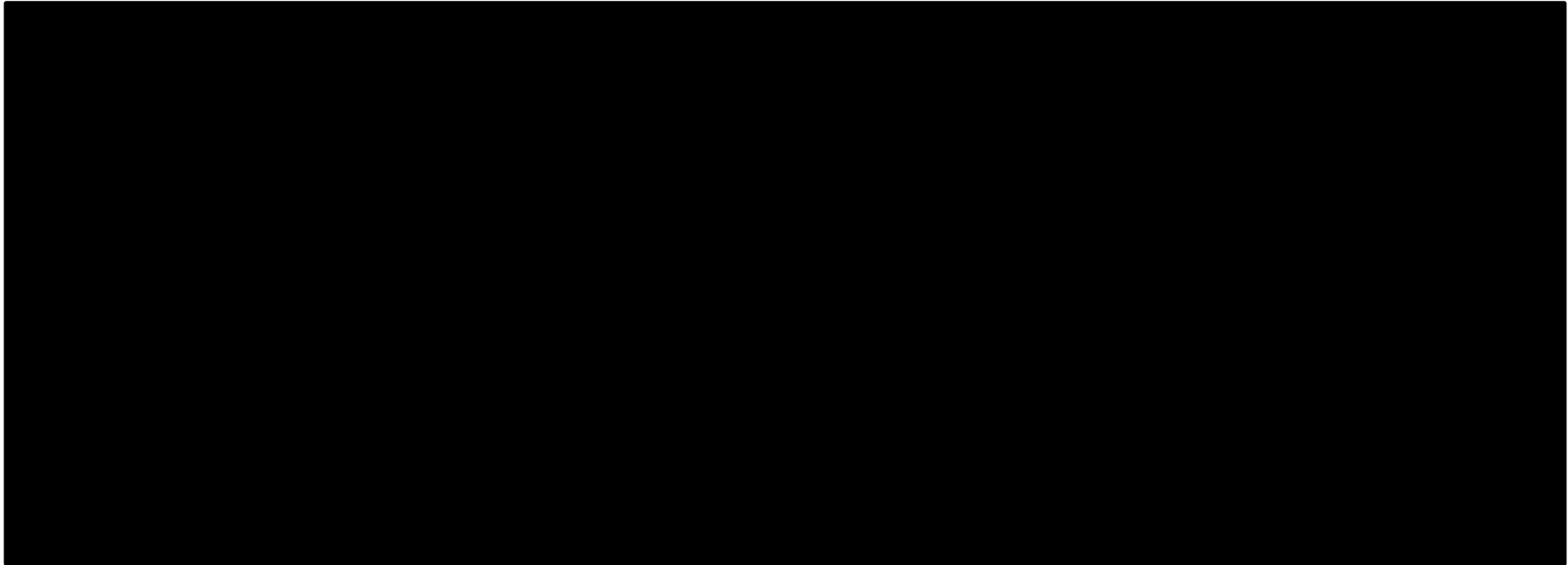
System Peak Forecast Results

System Peak Results



System Peak Forecast Contributions

Customer Class Compositional Analysis of System Coincident Peak (MW) at 50th

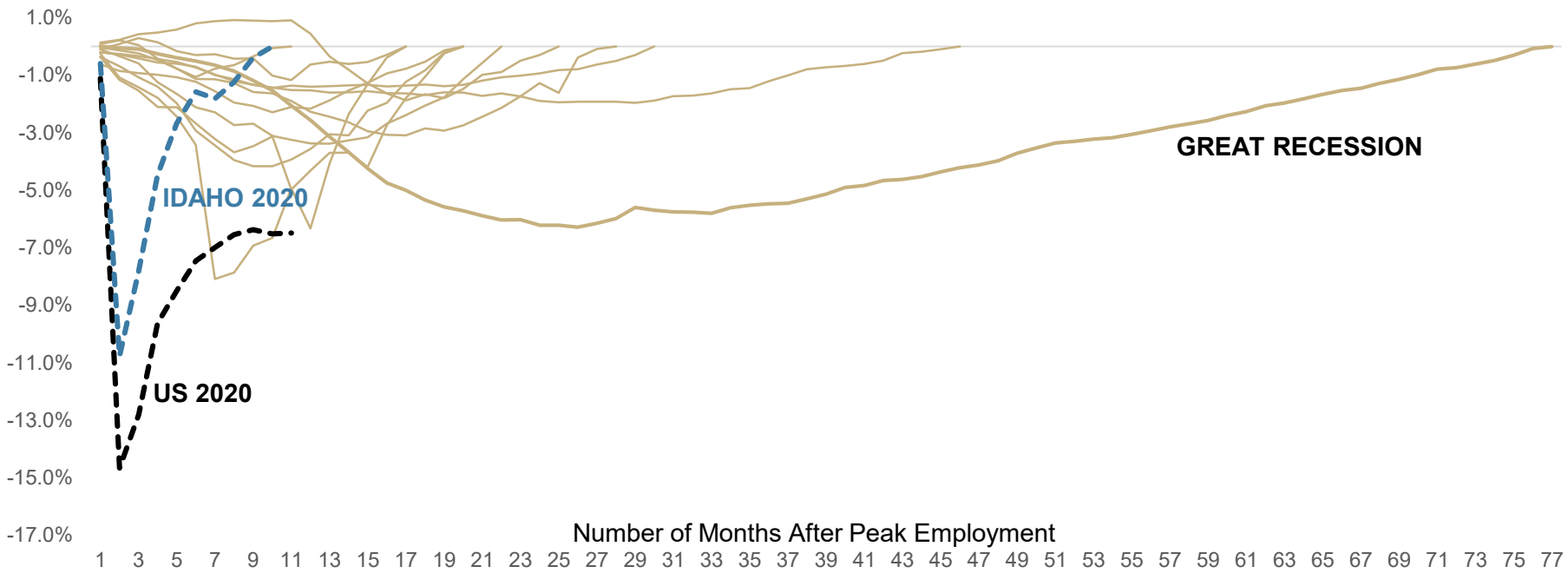


A thick yellow line runs horizontally across the top of the slide. It starts as a straight line, then curves downwards in a smooth arc, and then continues as a straight line to the right edge.

Macroeconomic Drivers

Comparative Analysis: Idaho's Labor Market

Percent Job Loss Post WWII Recessions

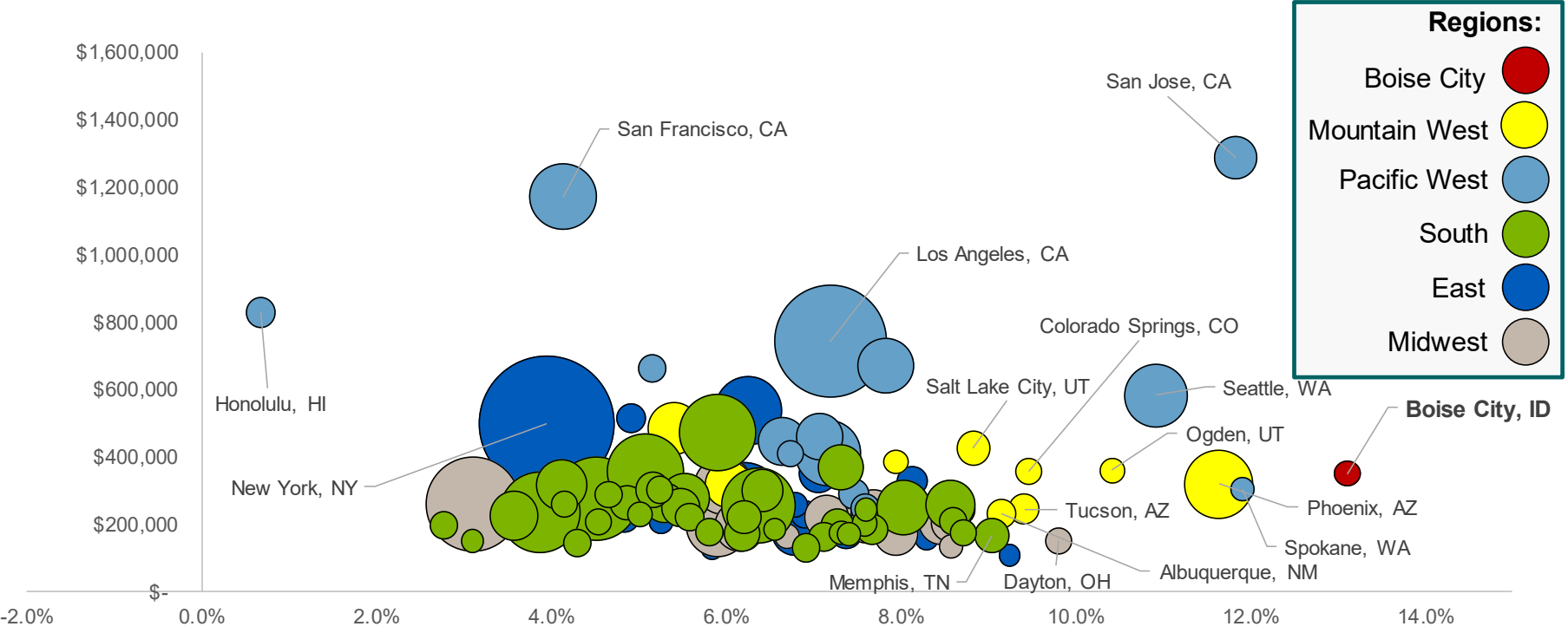


Source: U.S. Bureau of Labor Statistics (BLS): Current Employment Statistics (CES), Quarterly Census of Employment and Wages (QCEW). Actual data through Jan. 2021, Dec. 2020 preliminary estimates

Demand Caps Supply

Home Values Surge in Mountain West

Q3 Ending 2020 Top 100 US Cities Home Value Growth



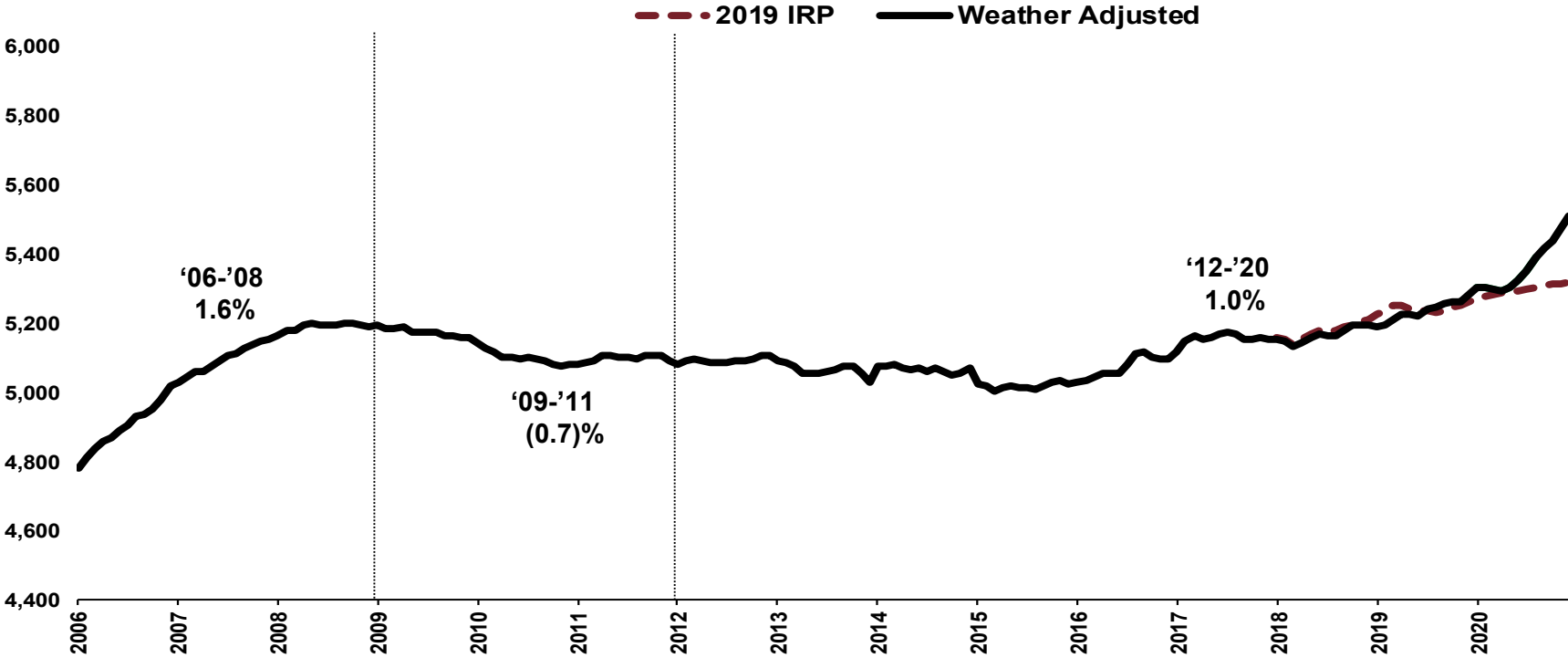
SOURCE: Zillow research. Zillow Home Value Index (ZHVI) of single-family homes through 09/30/20. Author's calculations.



Class Forecasts

Residential Sales Historic

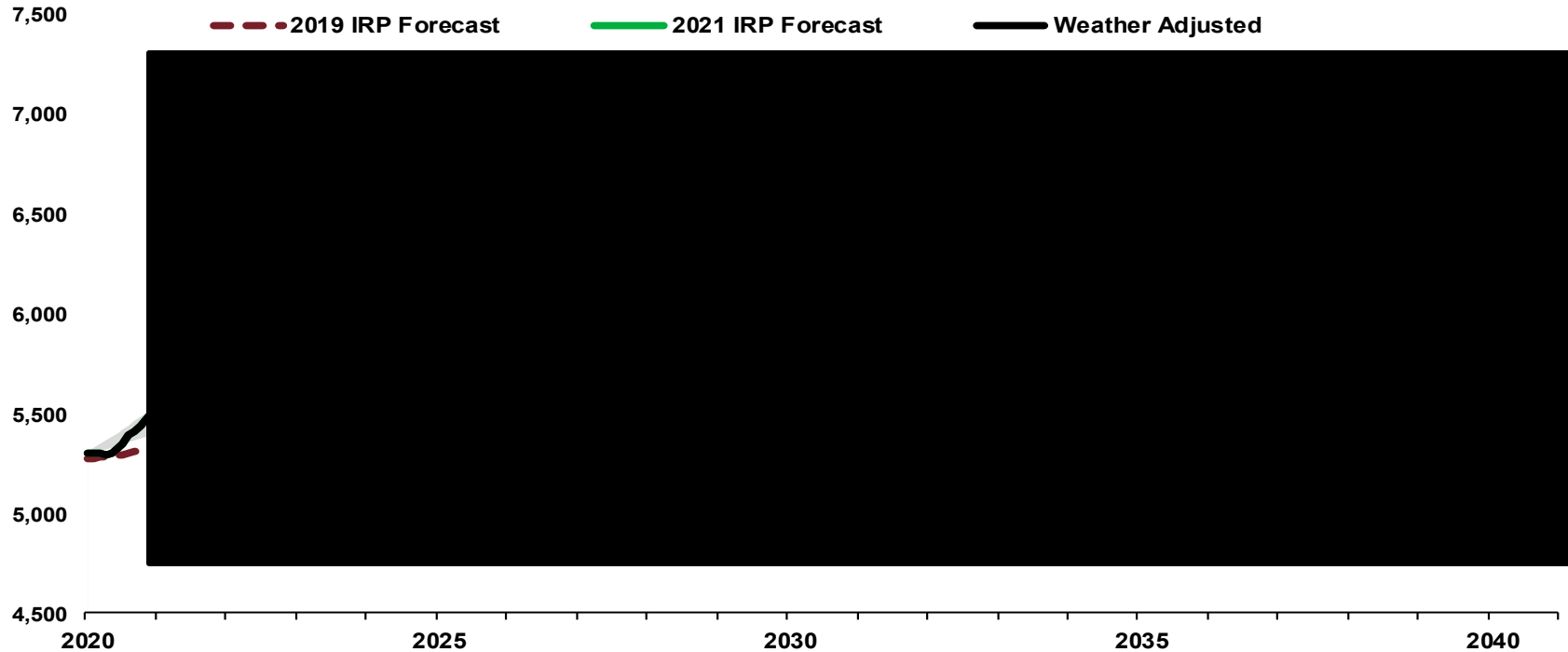
Residential Sales (000's MWh)



Residential Sales Forecast

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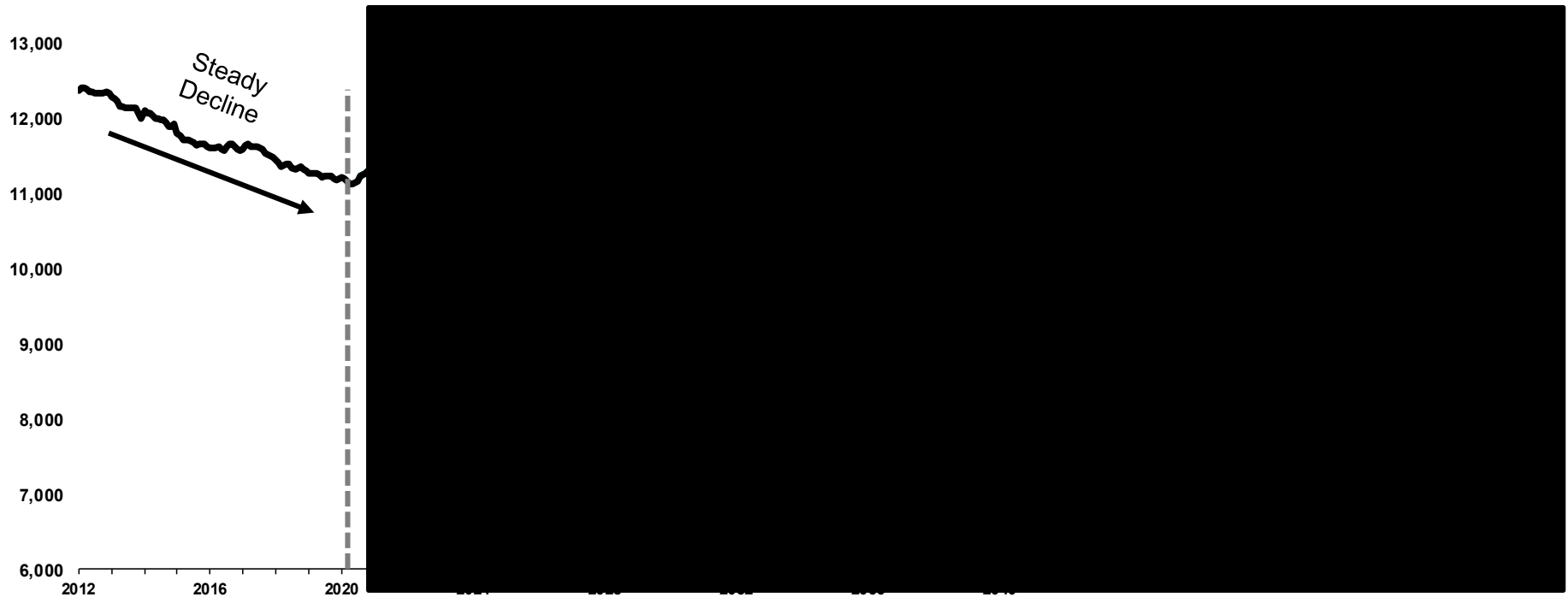
Residential Sales (000's MWh)



Residential Use Per Customer

Use Per Customer Forecast (weather adjusted kWh/Cust)

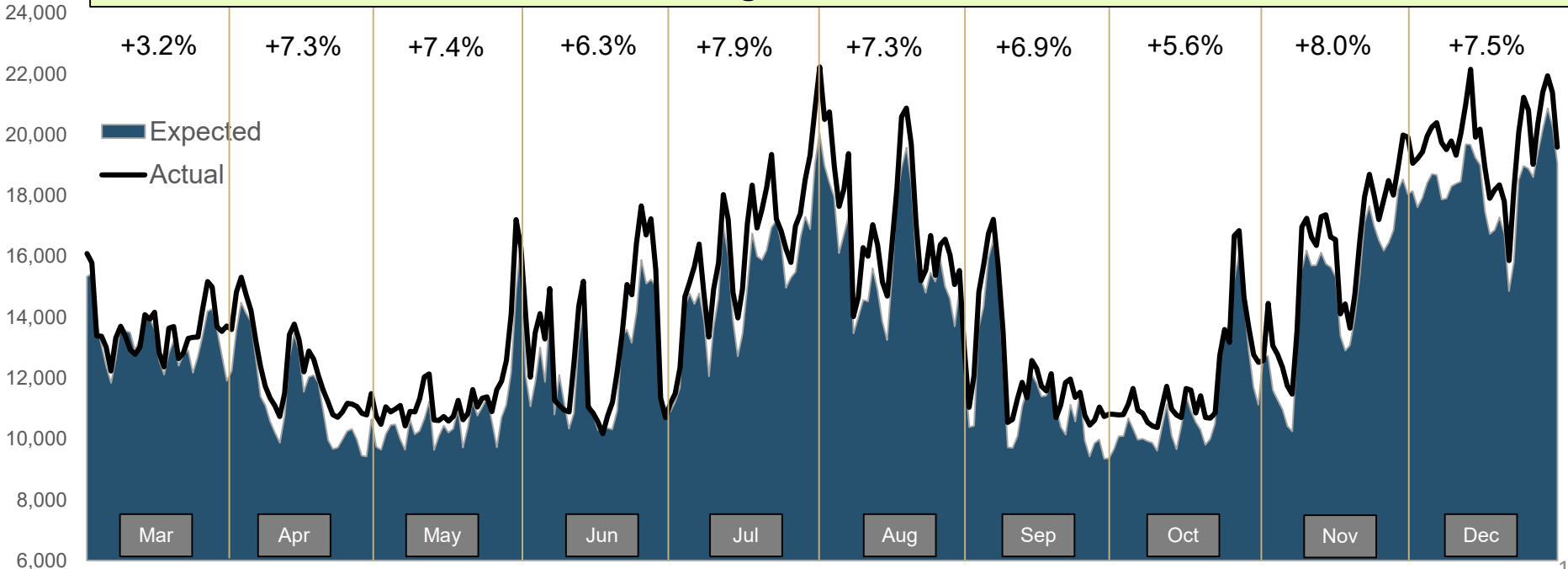
Tables/Notes



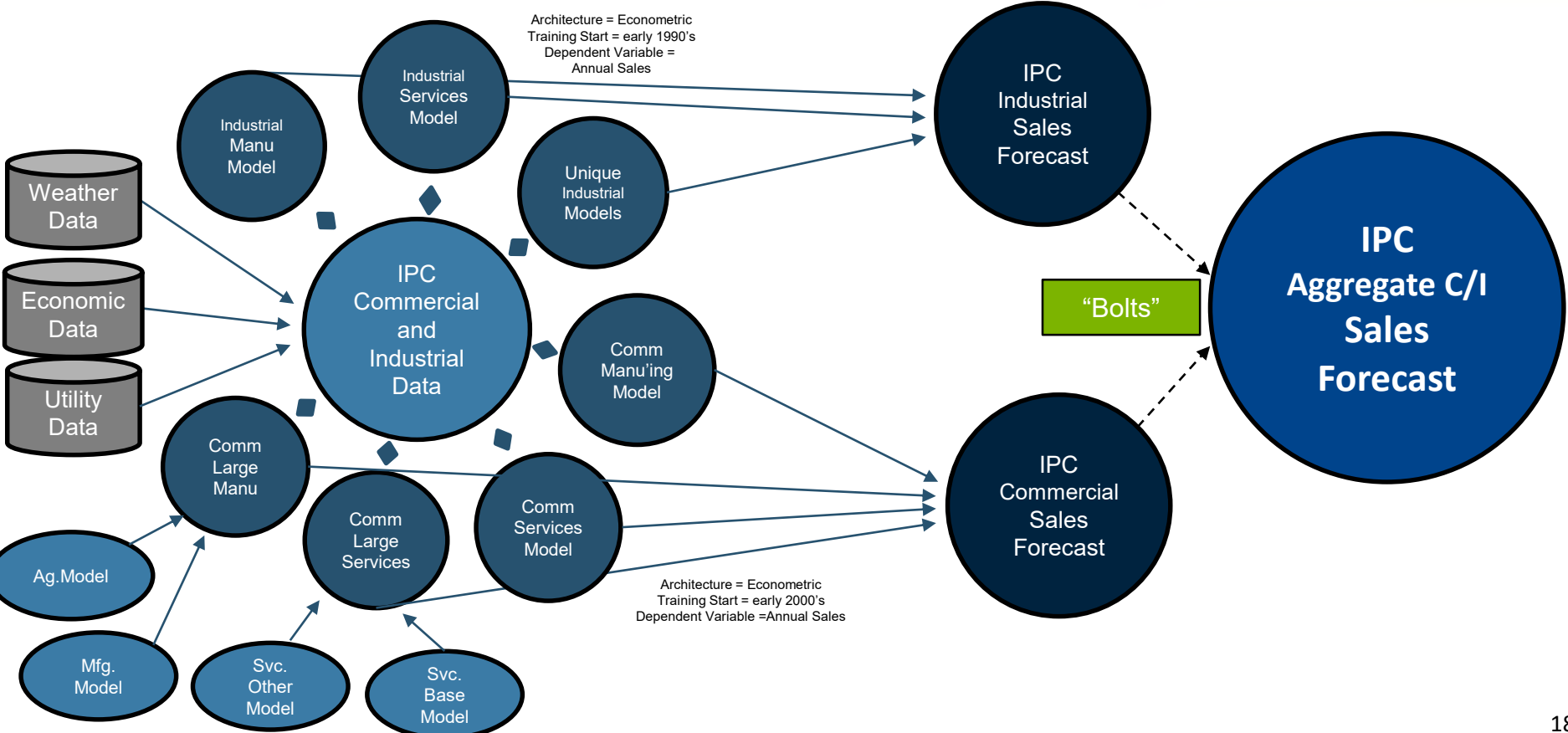
2020 Residential COVID Impacts

Estimated COVID-19 Impacts
Weather Sensitive Residential Load

Average Increase ~7%

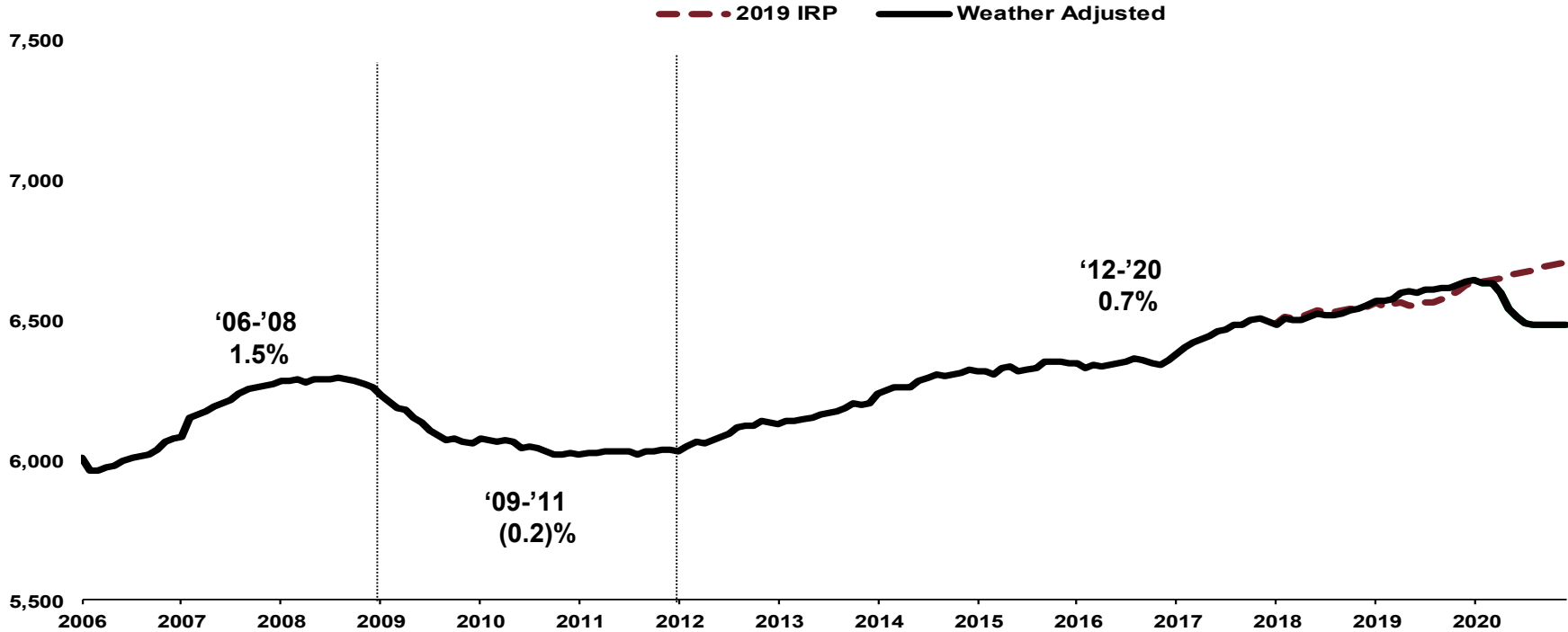


C/I Econometric Modeling



Commercial and Industrial Sales History

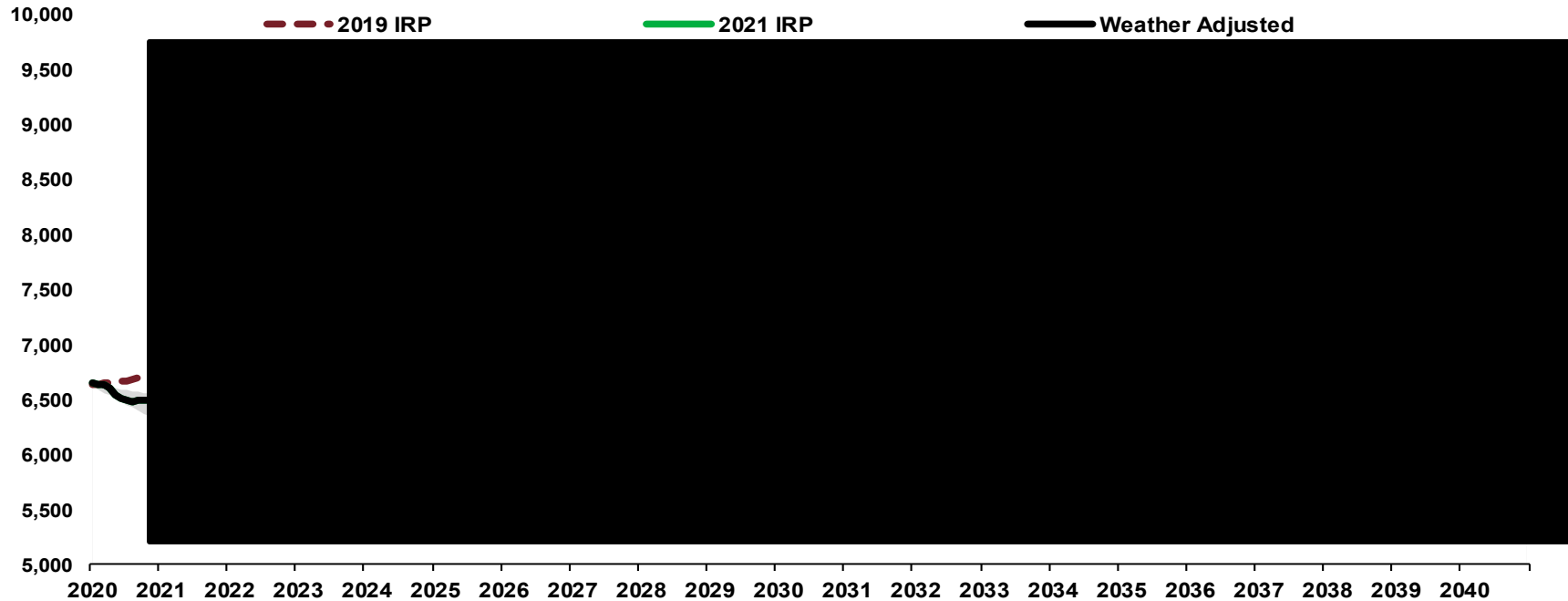
Commercial and Industrial Sales (000's MWh)



Commercial & Industrial Sales Forecast

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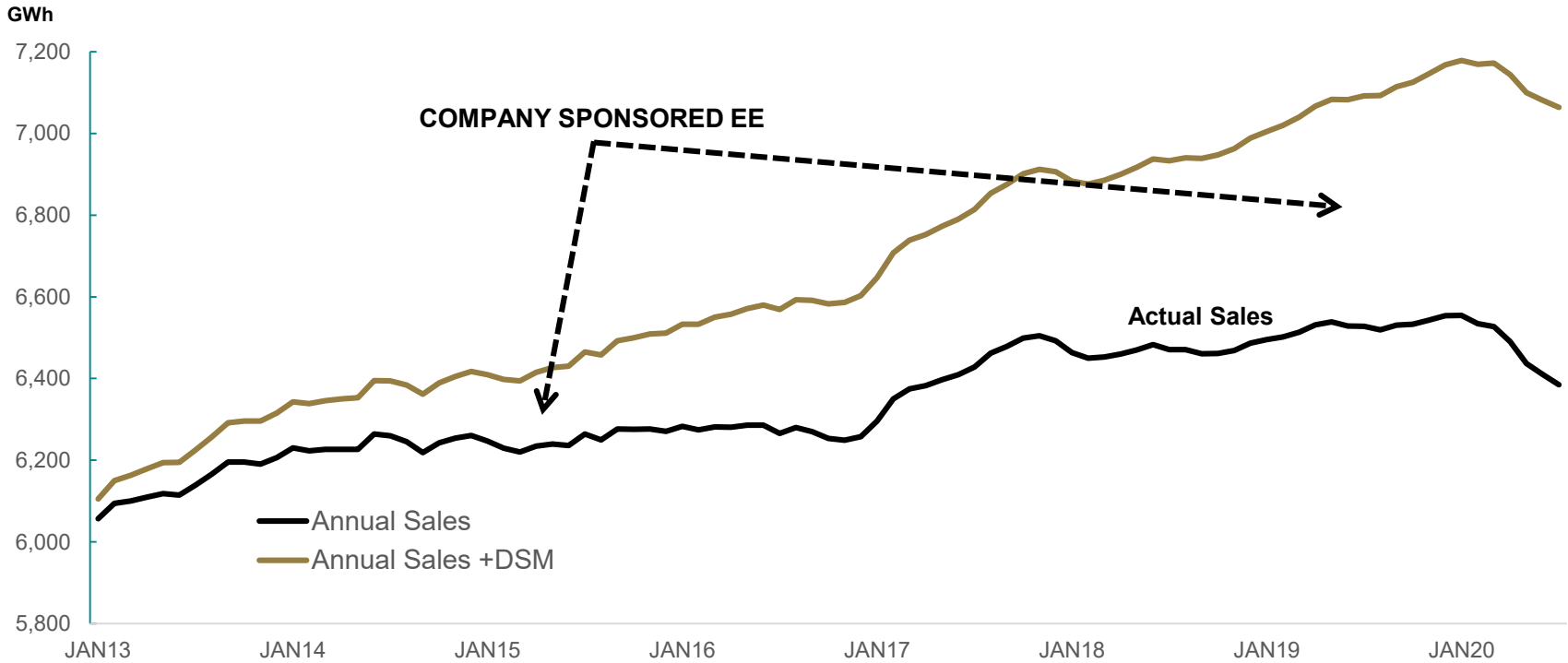
Commercial & Industrial Sales (000's MWh)



* Over 2% represents pre-DSM adjustments

C/I Sales - Historical Impact of EE

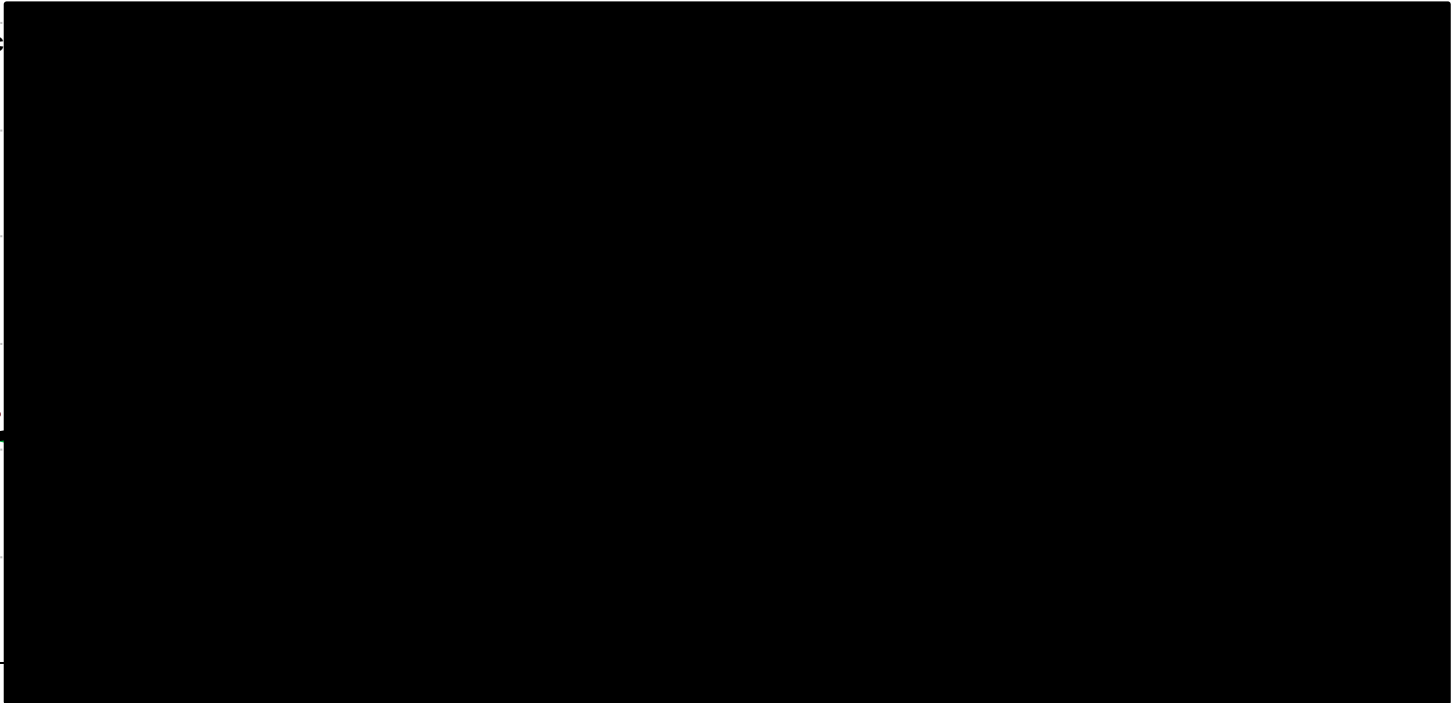
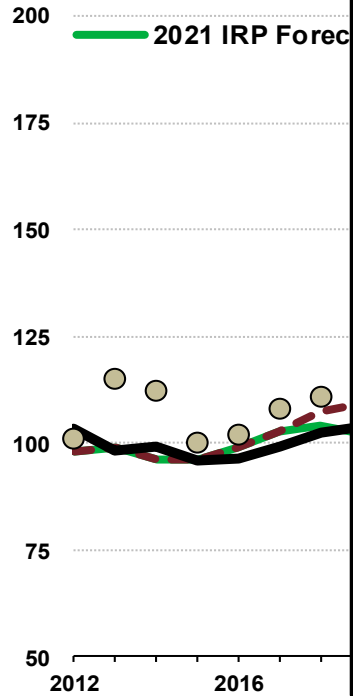
Annual Energy Efficiency in Commercial and Industrial (x/special contracts)



Special Contracts Sales Forecast

Special Contracts (class sum in aMW)

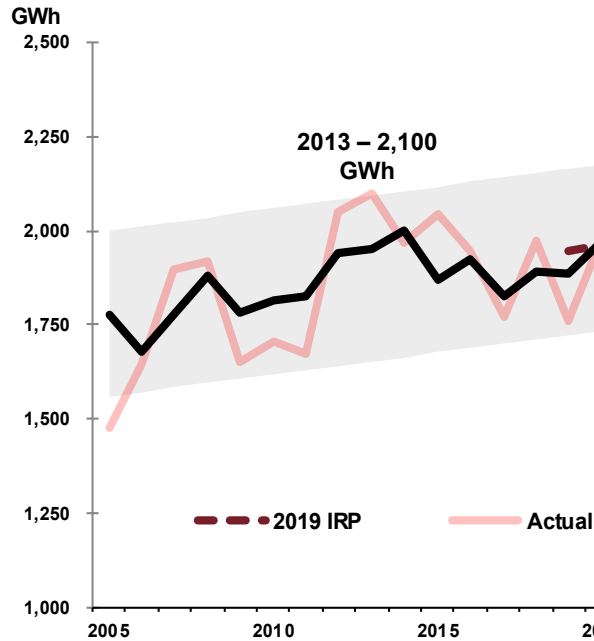
Forecast Notes



Irrigation Sales Forecast

Irrigation Sales Forecast (annual GWh)

Forecast Notes



Net Metering Assumptions

Net Metering				
Net-Metering Forecast	2021	2025	2030	2040
[Redacted Content]				

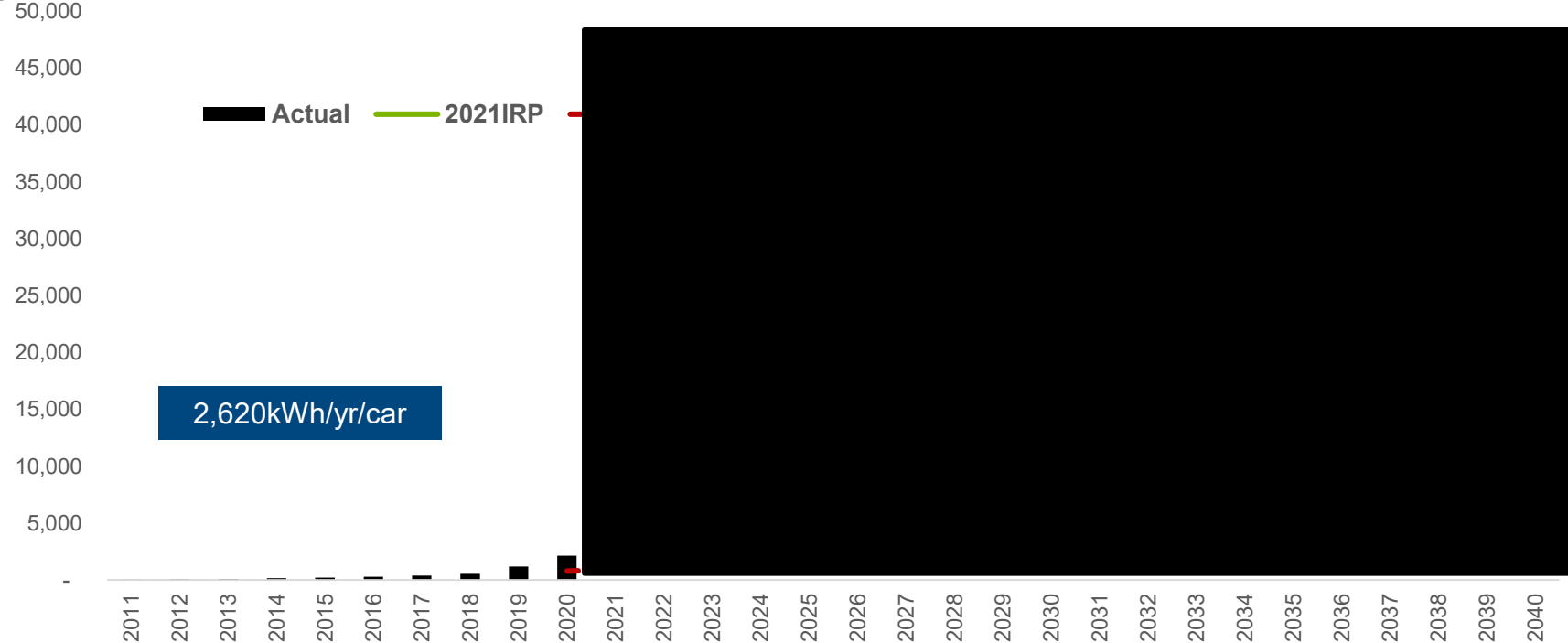
Notes:

- (1) Customer count as of Dec. 2020 for residential: 6,457
- (2) Modeled the impact of roof-top solar (NM) on the sales forecast, avg reduction in summer billing demand ~8%
- (3) Current 1.3% residential customer saturation, 2021 2.1%

Electric Vehicle Forecast

Idaho Power Electric Vehicle Forecast

Unit Forecast



2,620kWh/yr/car

Recap

Regional Economics Matters

- Fast down, swoosh back up
- Fundamentals (land and people) are still there
- Idaho impact less than national, migration continues to look strong

Residential Use-Per-Customer (UPC) & Cust

- UPC near term premium, returns to $\sim(1.0)\%/yr$
- Stronger customer growth in long term

C/I cycles back but some hit persists

- Commercial class rebounds, will take several quarters.
- Potential longer hits to retail & commercial space
- Large load expansions in 2021+ manufacturing and food

Risks, the “D”s

- Dynamic macroeconomic playing field
- Degrees, Droplets, Drought or Weather
- DERs and Efficiency