



Seattle City Light

SEATTLE CITY LIGHT 2017 RETAIL SALES FORECAST

2018 APPA Business and Financial Conference

Carsten Croff

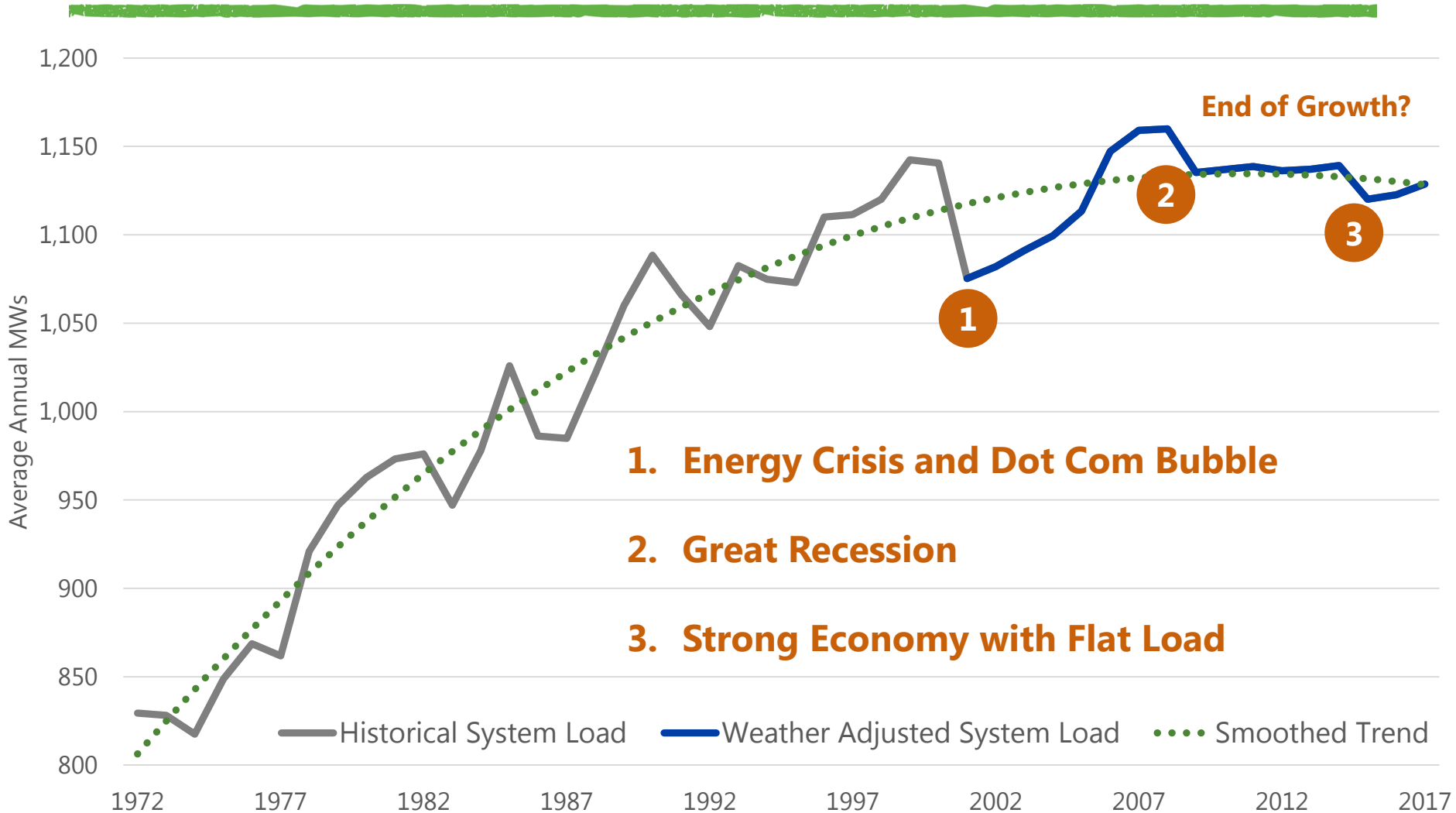
September 17th 2018

AGENDA

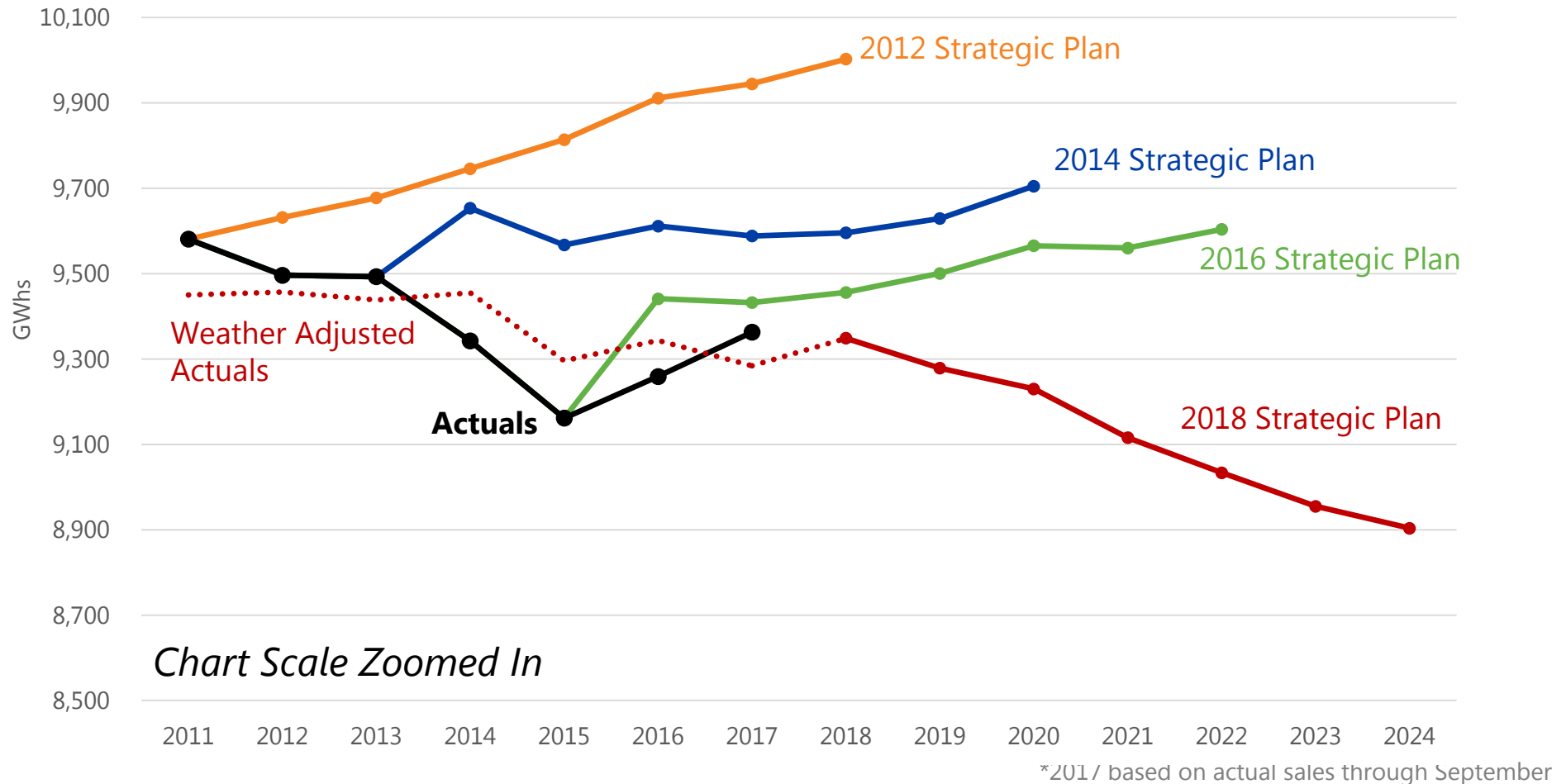
1. Background on City Light's Load and Load Forecasting
2. New Approach used in 2017
3. Questions

"An economist is an expert who will know tomorrow why the things he predicted yesterday didn't happen today."
– Laurence J Peter

SYSTEM LOAD HISTORY



CITY LIGHT RETAIL SALES FORECASTS



GOALS FOR 2017 – REBUILDING YEAR

- Leverage Conservation Potential Assessment for changes in end uses
- Develop robust weather normalization model
- Account for new customers being more efficient
- Develop a technical work team from across the utility
- Estimate impacts for
 - EV's
 - Solar PV
 - Climate Change

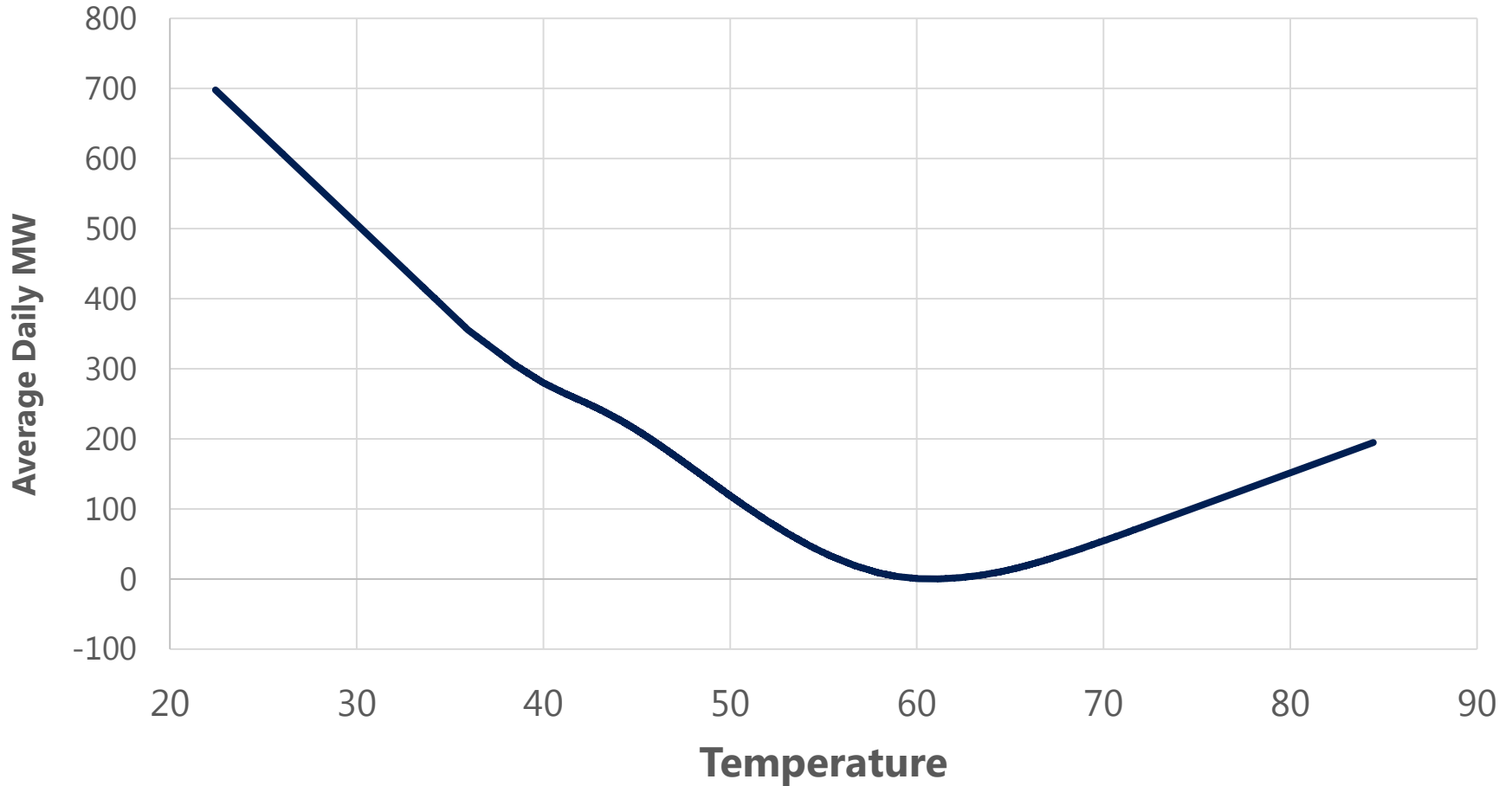
CHANGES IN END USES

| Residential | 2017 Makeup | 2017 Energy Intensity* | Percent Change in Energy Intensity | | | |
|-------------------|----------------|---------------------------|------------------------------------|--------------|--------------|--------------|
| | | | 2018 | 2019 | 2020 | 2021 |
| Interior Lighting | 9.4% | 718 | -7.0% | -5.6% | -7.1% | -4.9% |
| Heating | 29.6% | 2253 | 0.0% | -0.4% | -0.2% | -0.6% |
| Water Heating | 18.8% | 1431 | -0.9% | -1.1% | -0.8% | -1.1% |
| Appliances | 17.1% | 1303 | -0.9% | -1.1% | -0.8% | -1.0% |
| Miscellaneous | 15.0% | 1142 | 0.2% | -0.2% | 0.0% | -0.3% |
| Electronics | 8.1% | 617 | 0.2% | -0.2% | 0.0% | -0.3% |
| Exterior Lighting | 1.5% | 112 | -7.5% | -6.2% | -1.7% | 0.2% |
| <u>Cooling</u> | <u>0.5%</u> | <u>39</u> | <u>0.2%</u> | <u>-0.2%</u> | <u>0.0%</u> | <u>-0.4%</u> |
| Total | 100.0% | 7,615 | -1.1% | -1.2% | -1.0% | -1.0% |

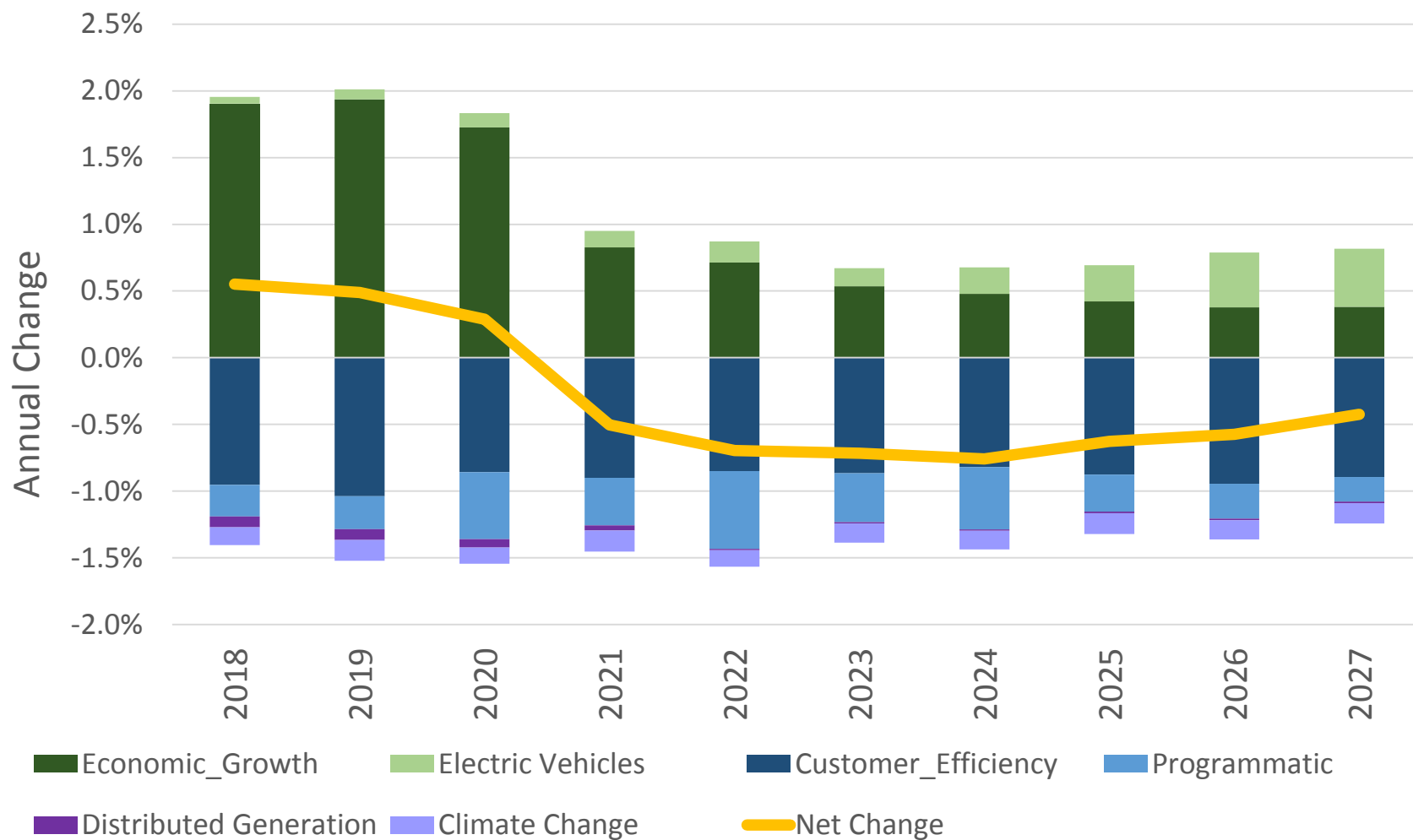
* annual kWh per customer

WEATHER NORMALIZE TO GET BASE YEAR ESTIMATES

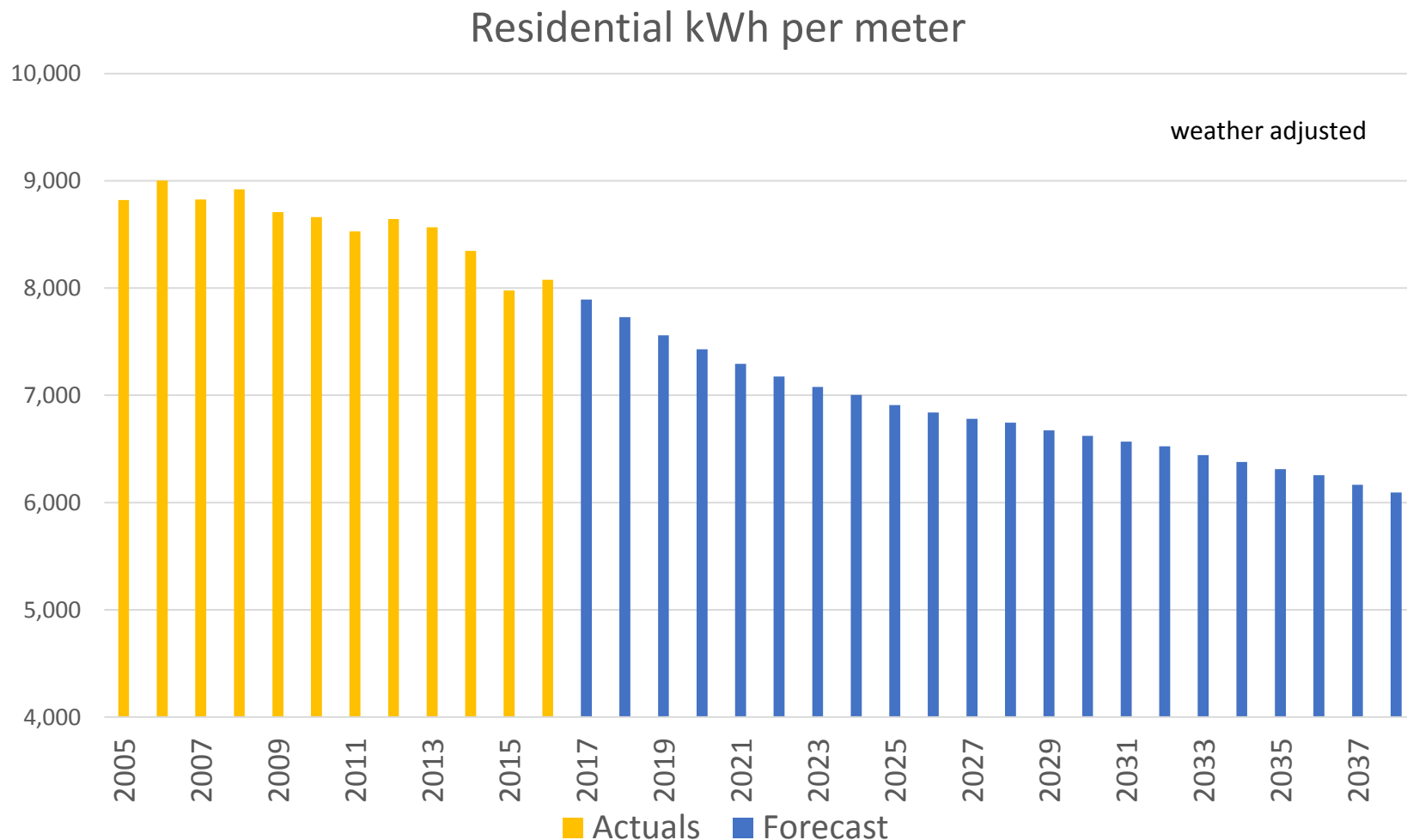
System Load to Temperature Function



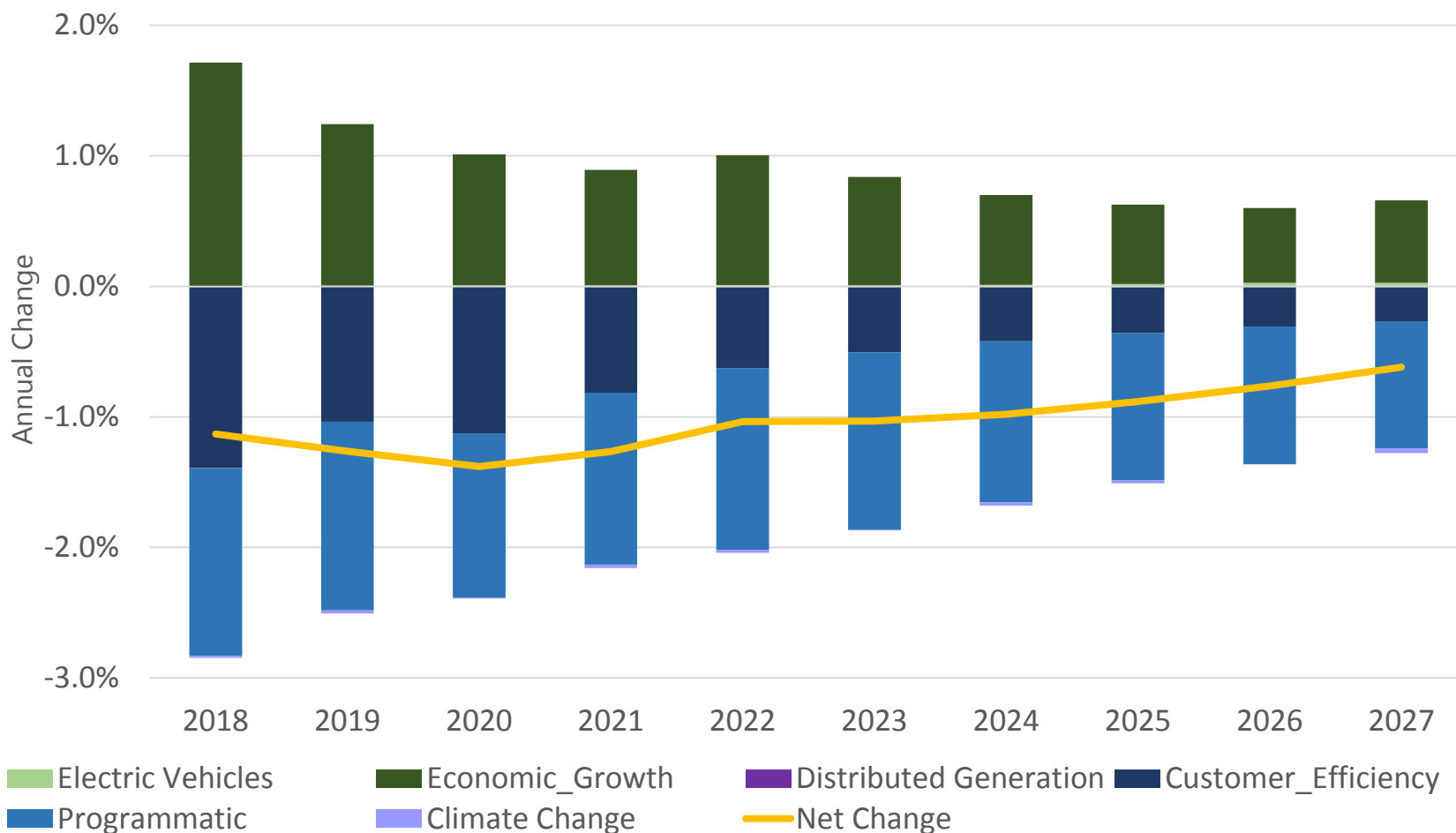
INCREMENTAL CHANGE IN RESIDENTIAL SALES



RESIDENTIAL ENERGY INTENSITY



INCREMENTAL CHANGE IN COMMERCIAL SALES



EFFICIENCY OFFSETS GROWTH

15 aMW of energy
efficiency expected
in 2019

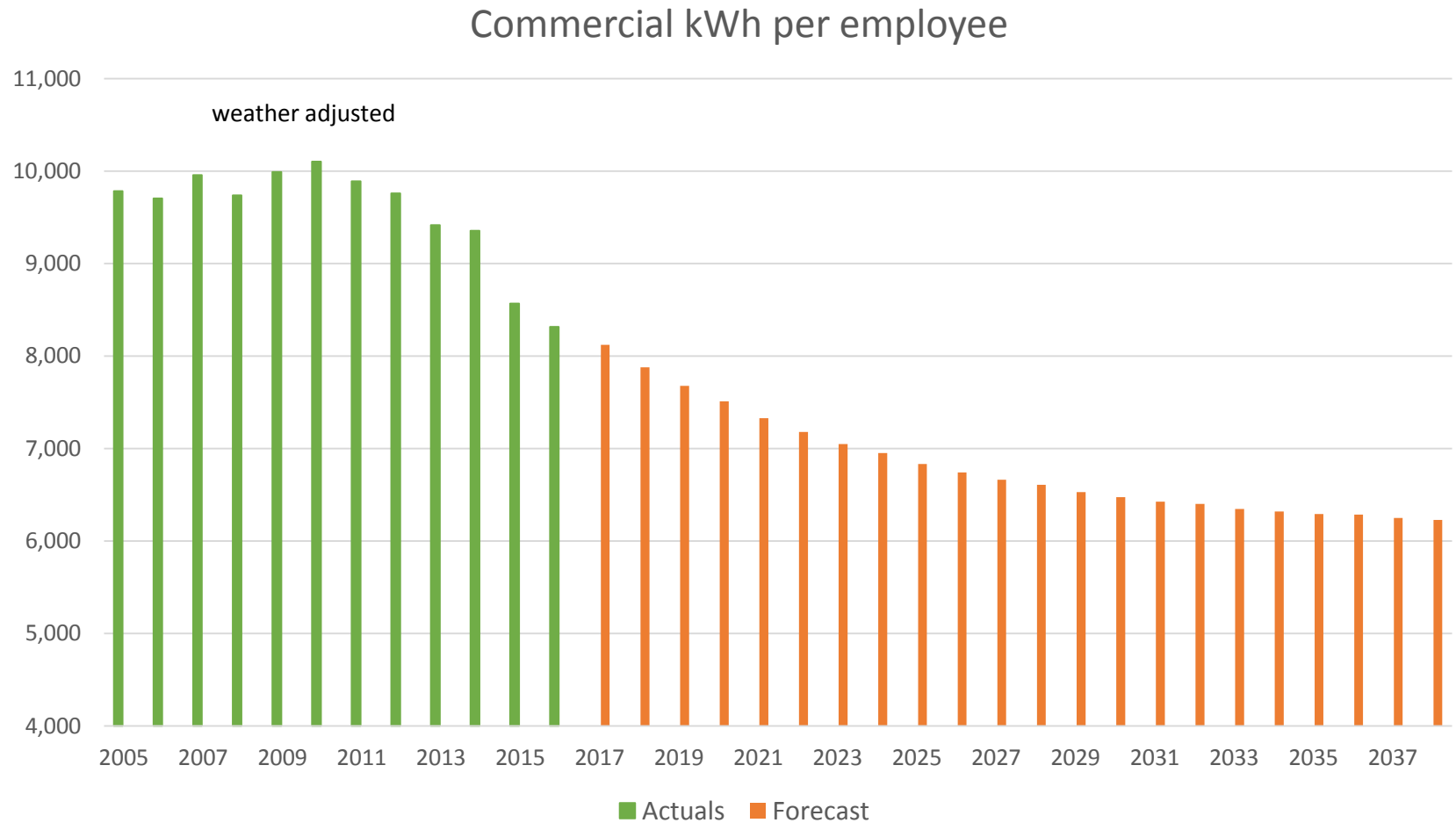
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30 new large office
buildings*

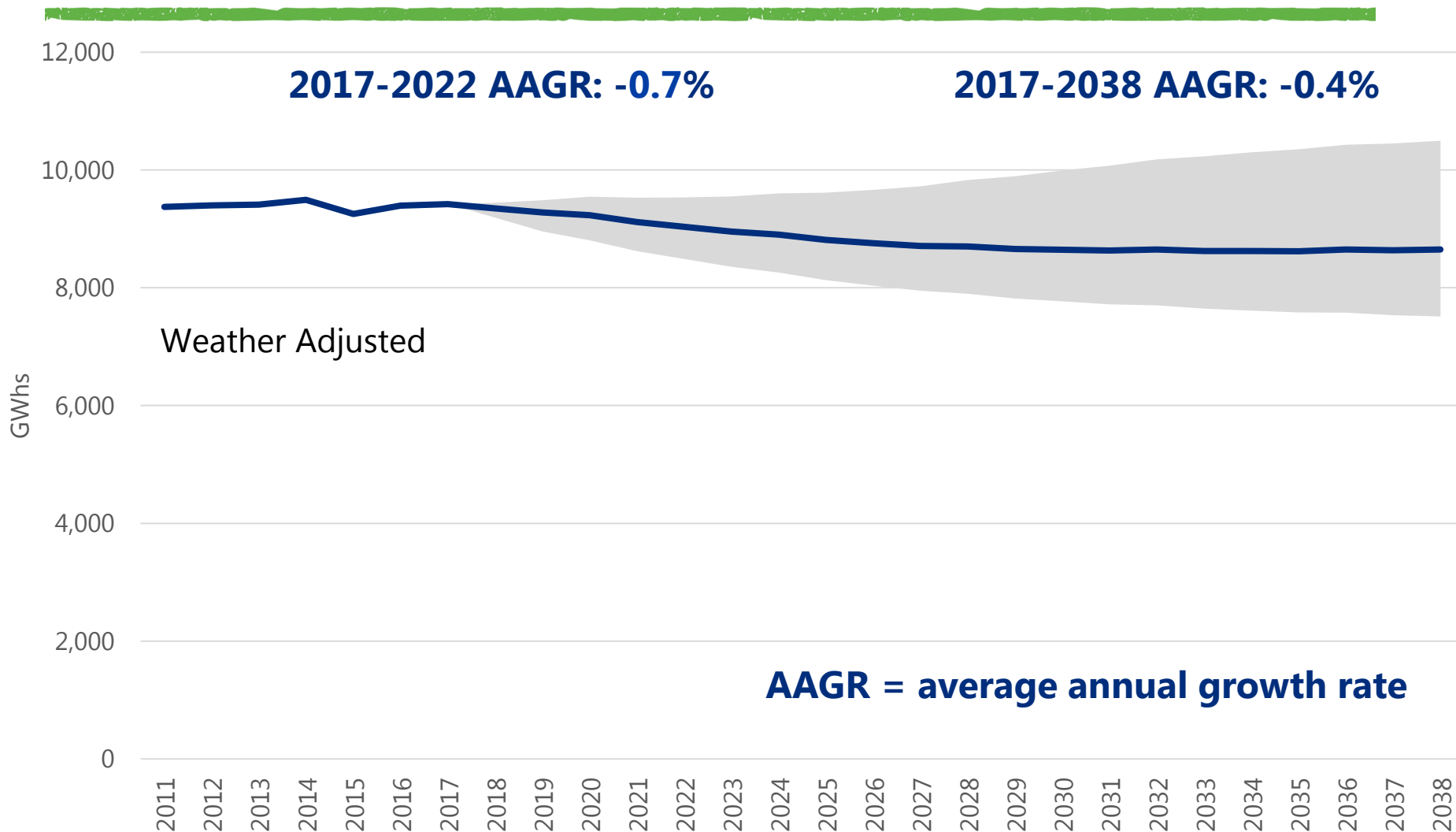
*approximately



COMMERCIAL ENERGY INTENSITY



2017 RETAIL SALES FORECAST



RATES

- Declining load puts upward pressure on rates
 - New (lower) load forecast resulted in a 2% increase in 2019 rates
- Utility costs don't decrease at the same rate as "lost" retail revenue
 - Fixed costs spread over less sales





Seattle City Light



THANK YOU
QUESTIONS?

