DOCKETED	
Docket Number:	21-IEPR-03
Project Title:	Electricity and Natural Gas Demand Forecast
TN #:	239191
Document Title:	Presentation - 2021 California Energy Demand Forecast – Inputs and Assumptions
Description:	*** THIS DOCUMENT SUPERSEDES TN 239171 *** - S1. 01 Garcia, Fugate, Neumann
Filer:	Raquel Kravitz
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	8/5/2021 9:10:37 AM
Docketed Date:	8/5/2021

IEPR Commissioner Workshop on Electricity and Natural Gas Demand Forecast: Inputs and Assumptions

2021 Integrated Energy Policy Report

The Workshop Will Start Shortly

August 5, 2021
California Energy Commission

IEPR Commissioner Workshop on Electricity & Natural Gas Demand Forecast: Inputs and Assumptions

Introduction
Heather Raitt, Assistant Executive Director, Policy Development

- Remote meeting consistent with EO N-08-21
- Morning and afternoon sessions
- Public comments
    - End of each session
    - Written comments by August 19, 2021

Opening Comments

- David Hochschild, Chair
- J. Andrew McAllister, 2021 IEPR Lead Commissioner
- Patty Monahan, Commissioner
- Siva Gunda, Commissioner

IEPR Commissioner Workshop on
Electricity & Natural Gas Demand Forecast: Inputs and Assumptions

1. **Evolving Energy Demand Assessments**
   - Matt Coldwell

2. **2021 IEPR Forecast Common Cases Inputs and Assumptions Updates**
   - Forecast Process Overview and Model Updates – Cary Garcia
   - Economic/Demographic Assumptions – Cary Garcia
   - Historic Energy Consumption Trends – Cary Garcia
   - Historic Weather Trends – Nick Fugate

3. **Additional Achievable Energy Efficiency & Fuel Substitution**
   - Ingrid Neumann

California Energy Commission

California Energy Demand Forecast – Introduction

Matt Coldwell, Manager – Demand Analysis Office

August 5, 2021

Workshop Goals

2021 California Energy Demand Forecast – Inputs and Assumptions

Provide information and solicit feedback on the inputs and assumptions being utilized for the 2021 California Energy Demand Forecast.

- ✓ Forecast Process Overview
- ✓ Model Updates
- ✓ Historic Energy Consumption Trends
- ✓ Historic Weather Trends
- ✓ Historic Zero-emission Vehicle trends
- ✓ Reflecting Potential Increase in Building Electrification
- ✓ Retail Rates Assumptions

Why do we forecast demand?

Warren-Alquist Act

Established the CEC

Public Resources Code 25301(a)

Requires the CEC to "conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices

Energy Planning Partners

CALIFORNIA
AIR RESOURCES BOARD

California ISO

Energy Forecasting Uncertainties

How will climate, policies, and the economy continue to change?

- ✓ Decarbonization Policies
- ✓ Frequency of Extreme Weather Events
- ✓ COVID induced economic structural shifts
  - Remote Working
  - Travel Modes and Patterns
  - Shopping and Dining

Evolving Energy Planning Needs

How must the forecast continue to evolve to capture uncertainty from climate and policies?

- ✓ Scenario development to capture short- and long-term uncertainties
  - Additional Achievable Framework
  - Long-term Energy Demand Scenarios Project
- ✓ Improved climate projections to reflect frequency of extreme weather events
- ✓ Continued coordination with planning partners and other stakeholders

Thank You!

2021 IEPR Forecast Common Cases Inputs and Assumptions Updates

Cary Garcia, Demand Analysis Office

August 5, 2021

Forecast Process Overview and Model Updates

California Energy Demand Forecast 2021, 2021-2035 (CED 2021)

- ✓Extended our typical 10-year forecast horizon to 2035
- ✓CED 2021 will **not** include preliminary forecast results
- ✓Draft forecast results available - Mid Nov.
- ✓Final forecast workshop - Dec. 2
- ✓Forecast adoption - Jan. 2022

Demand Analysis Working Group (DAWG)

energy.ca.gov/programs-and-topics/topics/energy-assessment/demand-analysis-working-group-dawg

Forecast Planning Areas

Electricity Planning Areas

1. Pacific Gas and Electric
2. Southern California Edison
3. San Diego Gas & Electric
4. Northern California Non-California ISO (NCNC)
5. Los Angeles Department of Water and Power
6. Imperial Irrigation District
7. Burbank/Glendale
8. Valley Electric Association

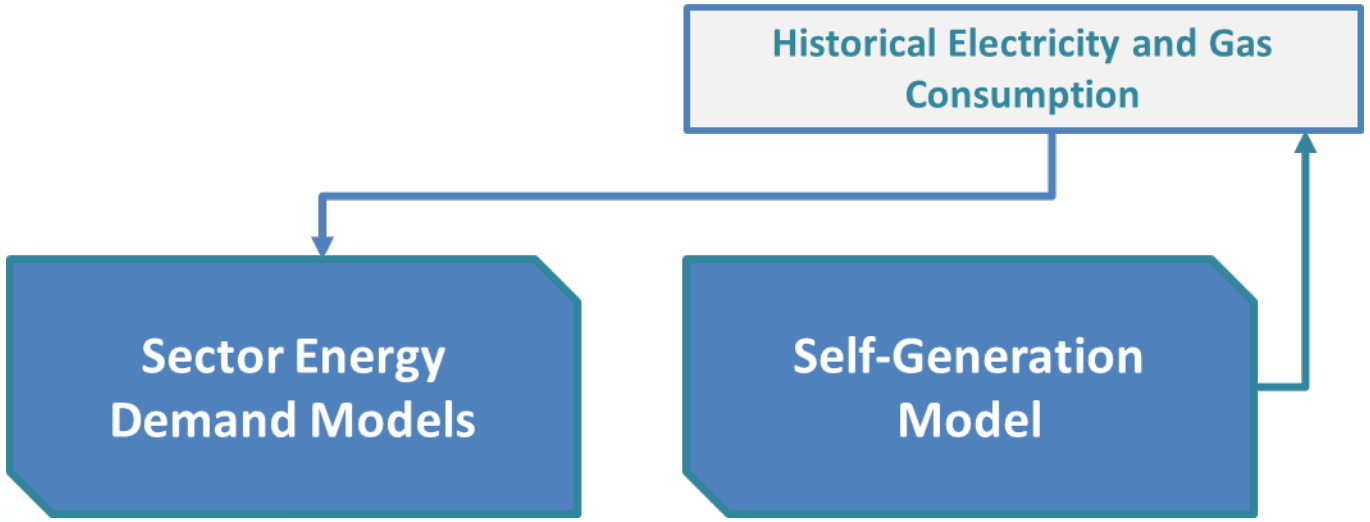
Gas Planning Areas

1. Pacific Gas and Electric
2. Southern California Gas Company
3. San Diego Gas & Electric
4. Other

Forecast Zones

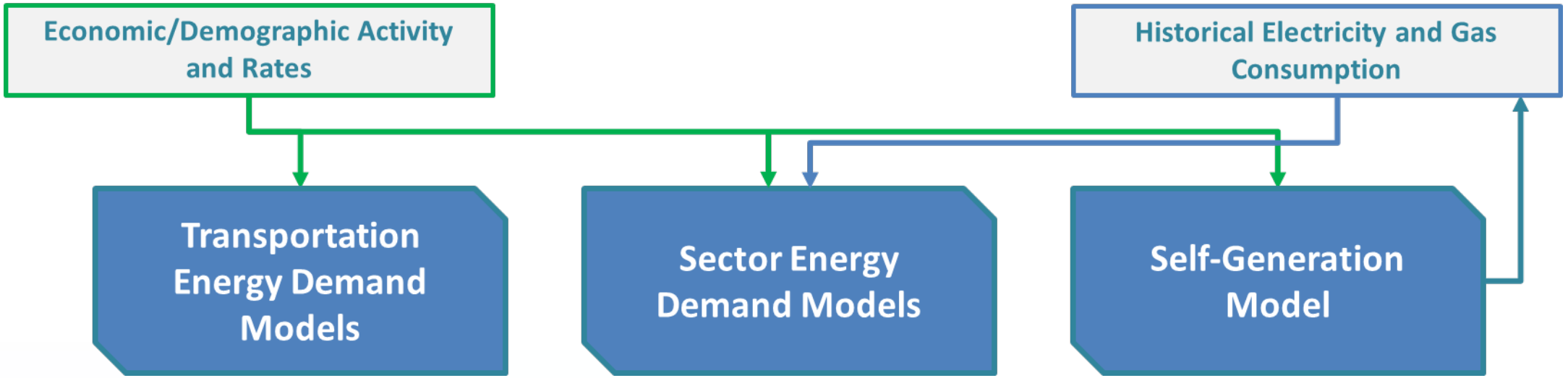
Planning Area	Forecast Zone
PG&E TAC Area	1. Greater Bay Area
	2. North Coast
	3. North Valley
	4. Central Valley
	5. Southern Valley
	6. Central Coast
SCE TAC Area	7. LA Metro
	8. Big Creek West
	9. Big Creek East
	10. Northeast
	11. Eastern
Northern California Non-California ISO (NCNC)	13. SMUD
	14. Turlock Irrigation District
	15. Remainder of BANC

Energy Demand Model System



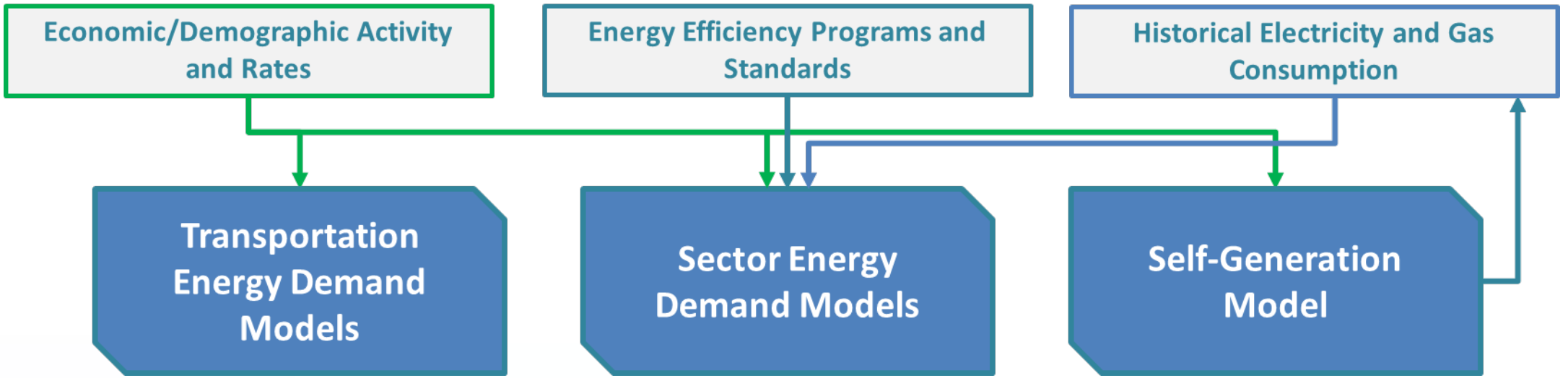
- Historical energy demand is updated with latest data and revision from QFER along with estimates of historical self-generation
- Historical data is provided to end use and NAICS based forecast models

Energy Demand Model System



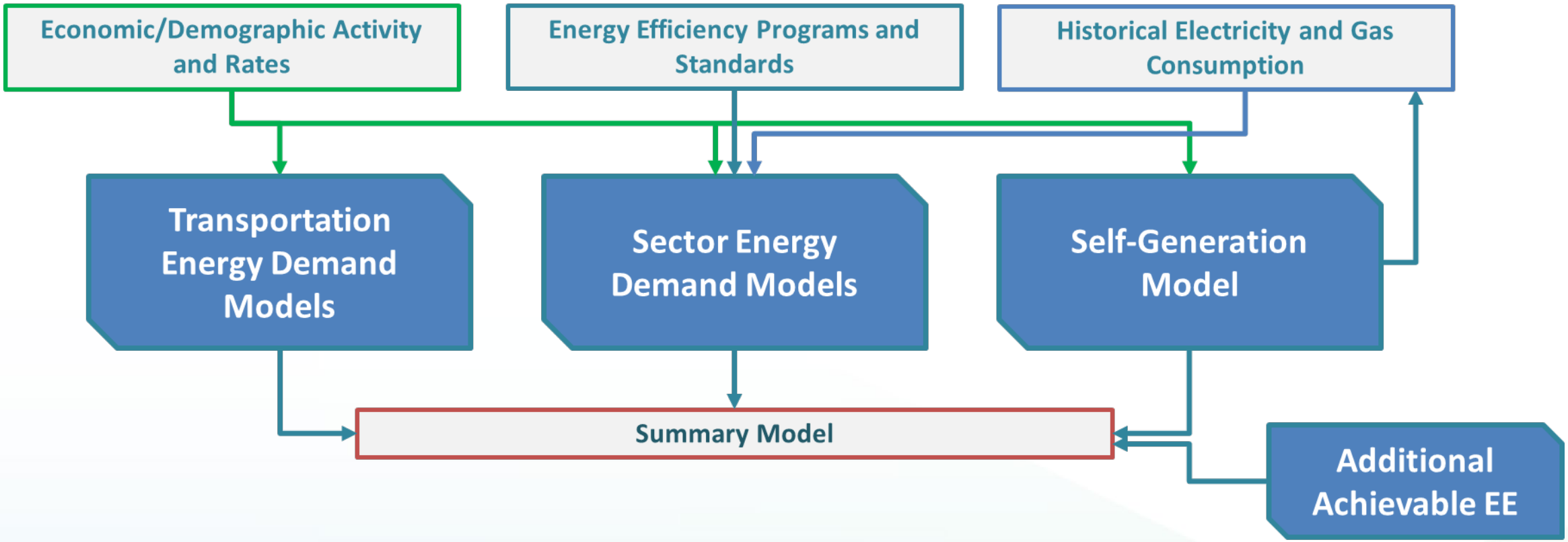
- Economic and demographic assumptions along with rate forecasts are given to sector, self-generation, and transportation models

Energy Demand Model System



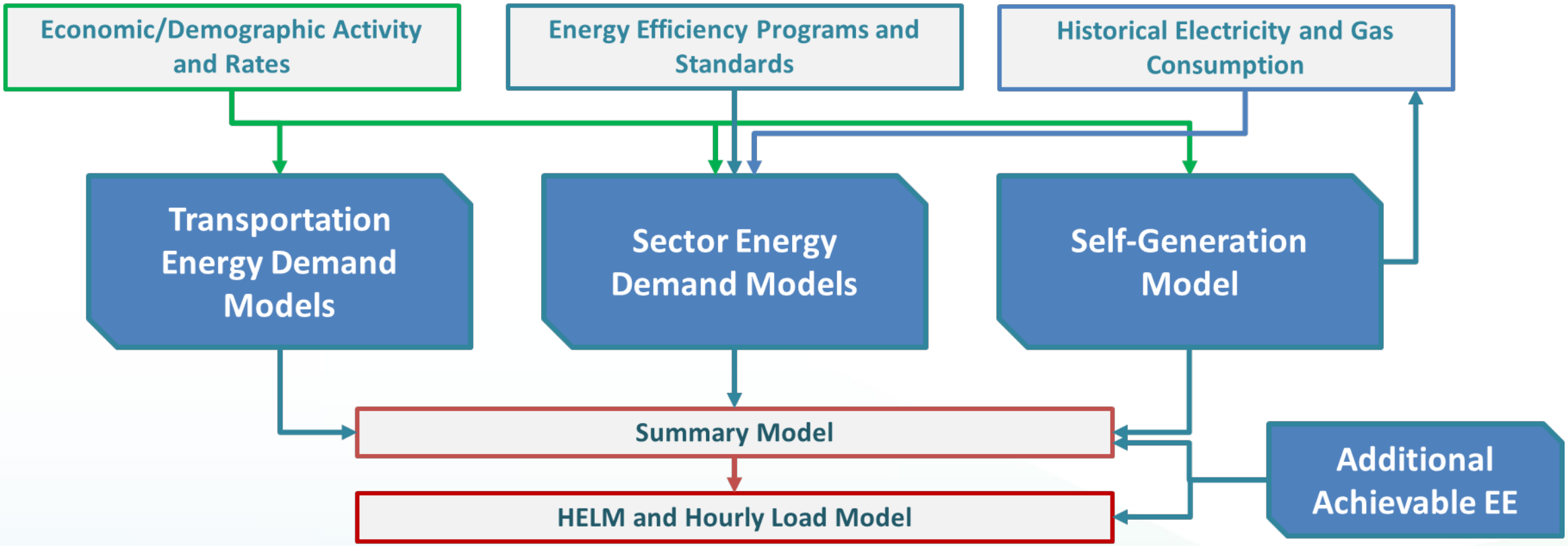
- Latest committed efficiency programs and standards estimates are provided to sector end use models

Energy Demand Model System



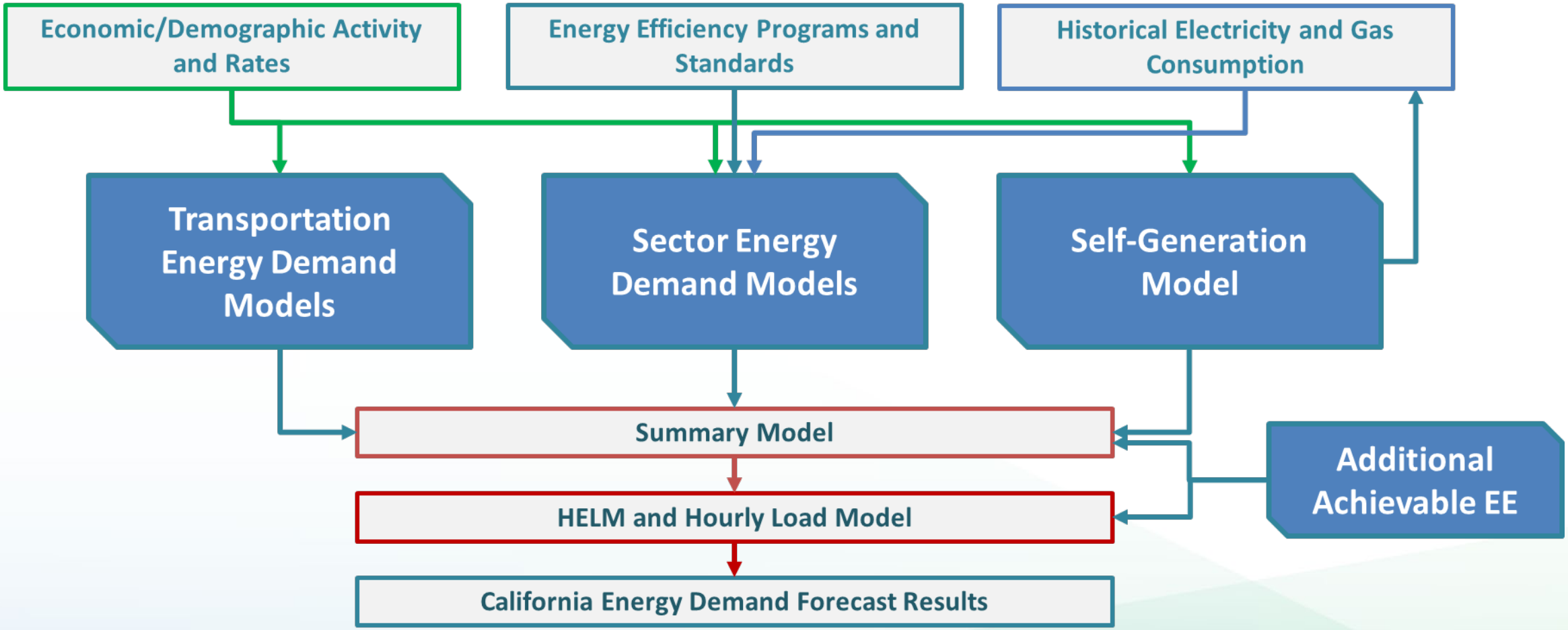
- Summary model processes and calibrates forecast model output
- AAEE results are combined with baseline forecast results to create managed forecast scenarios

Energy Demand Model System



- Baseline forecast results are fed into HELM and Hourly Load Model
- Hourly AAEE is provided to generate managed hourly scenarios

Energy Demand Model System



Input Updates

Historic Energy Consumption

– Additional history, 2020 sales and consumption

Economic and Demographic Activity

– Moody's economic projections - May 2021
– Department of Finance demographic projections – Jan. 2021

Rates

– Update historical rates
– Updated assumption for future rate impacts

Energy Efficiency

– 2019/2020 efficiency programs
– 2019 T24 and T20 building and appliance standards

Self-generation Inputs

- Updated Interconnection data
  - BTM PV capacity: ~11,000 MW (Dec 2020)
    - About 1,400 MW installed in 2020
    - Revisions to historical years (2019 and earlier) added another 160 MW
  - BTM Storage capacity:
    - Will primarily rely on interconnection data this year
    - Last year: used interconnection data for IOU residential systems and SGIP incentive data for IOU non-residential systems and all POU systems
    - Significant upward revision of pre-2020 installed capacity (>10%)

- Residential Appliance Saturation Survey (RASS) data
  - Residential PV model uses RASS data to estimate average PV system size

Self-generation Updates

- Update PV scenarios to reflect NEM 3.0 proposals.
  - NEM proceeding opened by the CPUC after completion of 2020 IEPR forecast.
  - CEC high demand (low PV adoption) case uses compensation scheme that is more optimistic than proposals by IOUs and CPUC public advocates office.
- Federal Investment Tax Credit (ITC) extension
  - ITC extended by Congress in Dec 2020, after 2020 IEPR forecast
  - Tax credits for PV and Storage extended by two years (2021 was previous sunset)
- Incorporate compliance-based PV forecast for new homes (based on Title 24 requirements) into the residential PV model
  - Previous external approach to modeling PV on new homes led to double counting

BTM PV –Impacts of Updates

Major Model Updates / Assumption Changes	Expected effect on the forecast of PV adoption
Updated NEM 3.0 scenarios	
Extension of Federal ITC	
Incorporate PV forecast for new homes into residential PV model	

Other Updates

Household Starts

- Will rely on Moody's projections of starts for CED 2021
- Previous method inferred starts from household forecast but showed some inconsistencies with historical permitting estimates
- Also used to inform self-generation forecasts

Commercial Forecast

- Re-evaluate building vacancy rate assumptions
- Delays in Commercial End Use Survey data due to COVID-19

Agriculture

- Refinements to estimates of cannabis impacts
- Lack of historic data continues to lead to a significant uncertainty

Economic and Demographic Assumptions

Common Case Assumptions

- Common case assumptions support a coordinated approach to modeling electricity, gas, and transportation sectors
- Simplifies the transfer of data between modeling systems
- Maintains consistent analytical basis for policy questions/analysis

More on Assumptions

- Core metric is energy demand therefore assumptions are organized by demand case: high, mid, and low
- Mid demand case represents the “likely” outcome given a set of baseline assumptions
- High and low demand cases represent a range of uncertainty rather than extreme outcomes

Energy Demand Cases

Mid Energy Demand

- “Likely” demand case assumptions

High Energy Demand

- Higher econ/demo projections
- Higher impacts from climate change
- Higher vehicle electrification
- Lower energy rates
- Lower self-generation adoption

Low Energy Demand

- Lower econ/demo projections
- No additional climate change impacts
- Lower vehicle electrification
- Higher energy rates
- Higher self-generation adoption

Economic and Demographic Scenarios

Moody's scenarios for key economic drivers:

- Custom High Scenario – High Energy Demand
- Prolonged Lower Growth – Low Energy Demand
- Baseline (50/50) – Mid Energy Demand

Demand Department of Finance:

- Households
- Population

Statewide Comparison by Demand Case

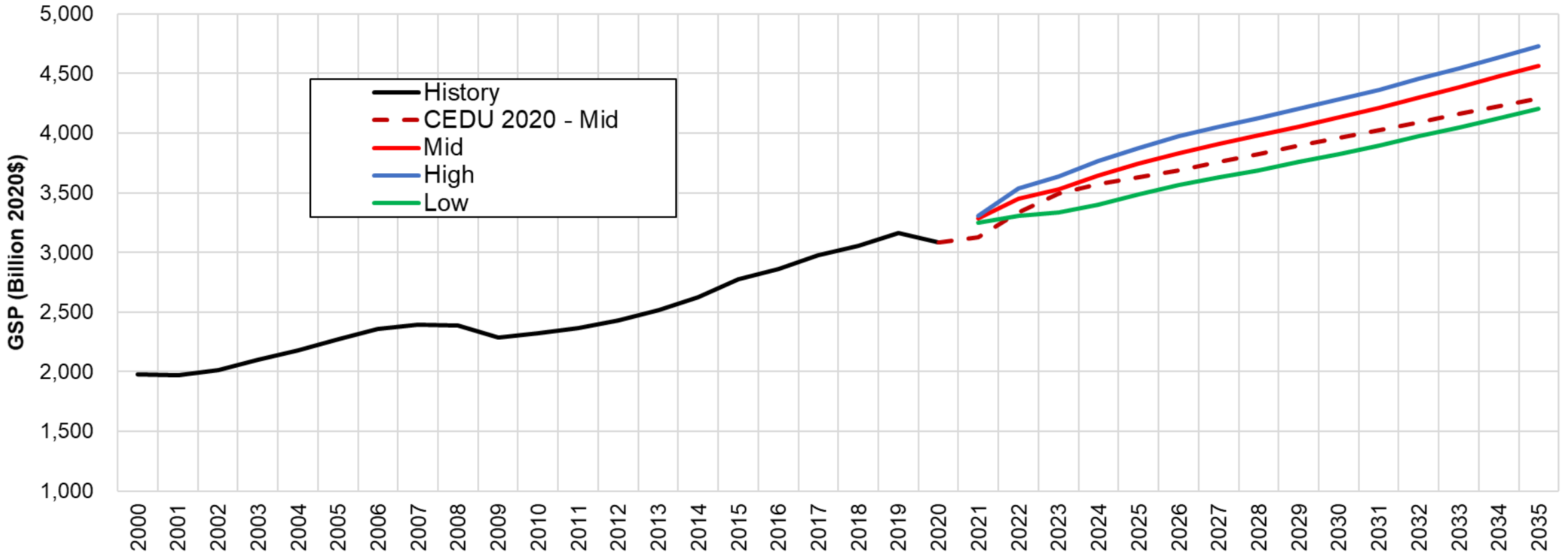
Average Annual % Growth, 2021-2035

Driver	CEDU 2020 - Mid	Mid	High	Low
Gross State Product	2.3%	2.4%	2.6%	1.9%
Per Capita Personal Income	2.1%	1.8%	2.0%	1.5%
Commercial Employment	1.0%	1.0%	1.1%	0.8%
Population	0.5%	0.5%	--	--
Households	0.8%	0.8%	1.2%	--

- Long-term growth rates for population and household are similar but levels have been reduced
- Population reduced by 1.1% by 2035
- Total households reduced by 3.7% by 2035

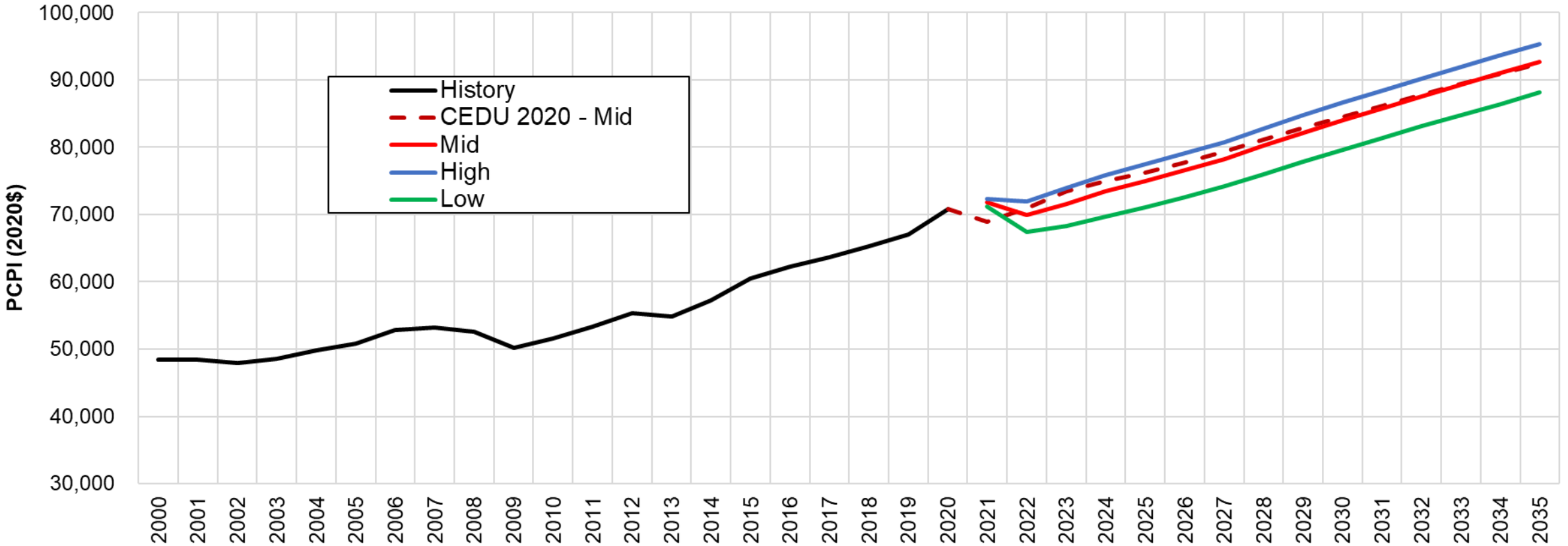
Statewide GSP

- GSP recovery occurred sooner than previously expected
- Slightly more GSP in 2022 followed by continued steady growth



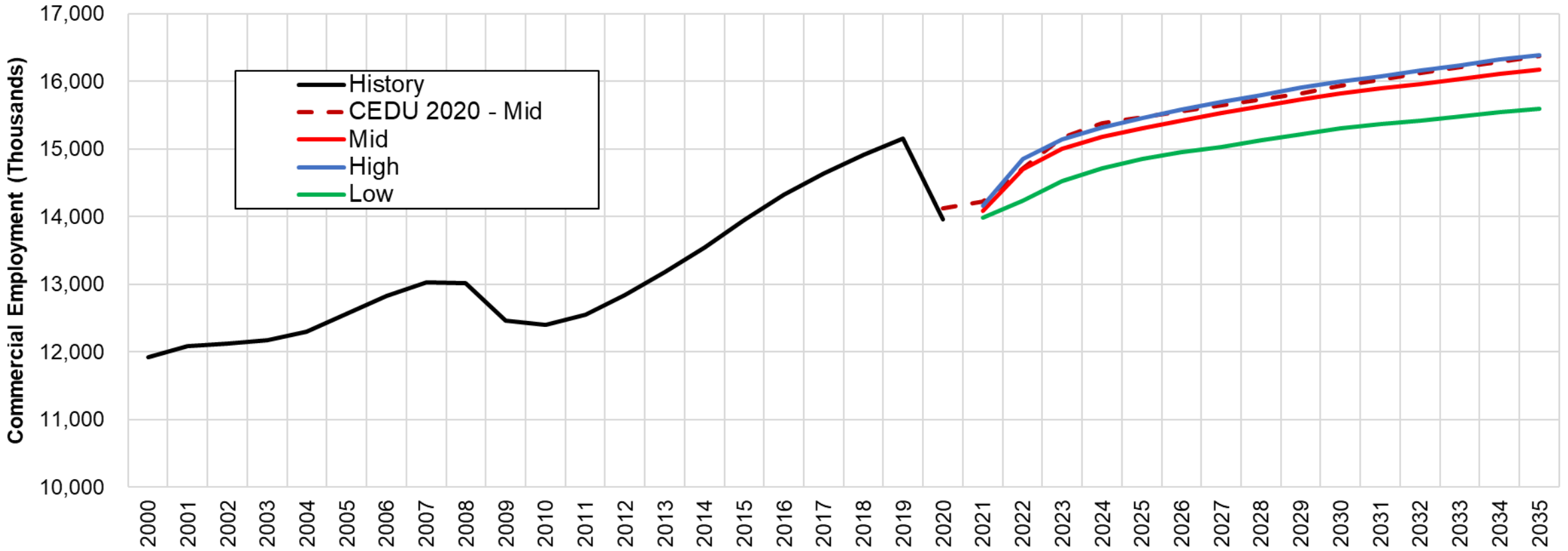
Statewide Per Capita Income

- Federal stimulus in 2021 led to increase income compared to previous forecast
- Small dip expected in 2022 but long-term growth is similar



Statewide Commercial Employment

- Employment increase from 2021 to 2022 adds ~600k
- 2019 levels of employment are met by 2024

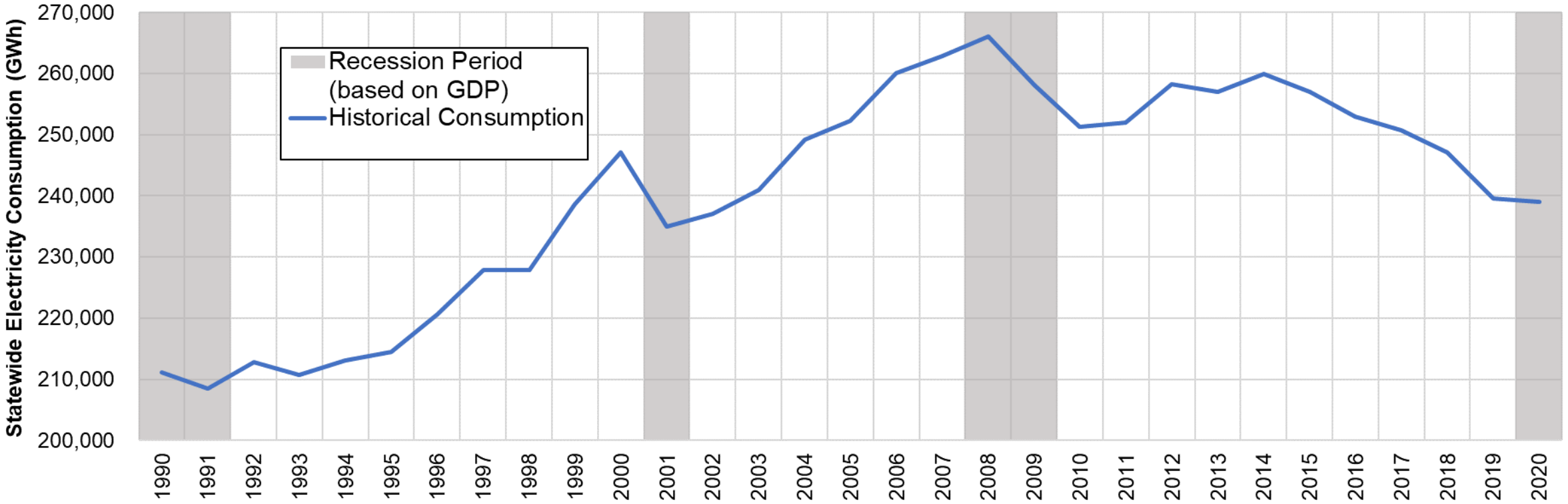


Historic Energy Consumption Trends

Historic Electricity Consumption

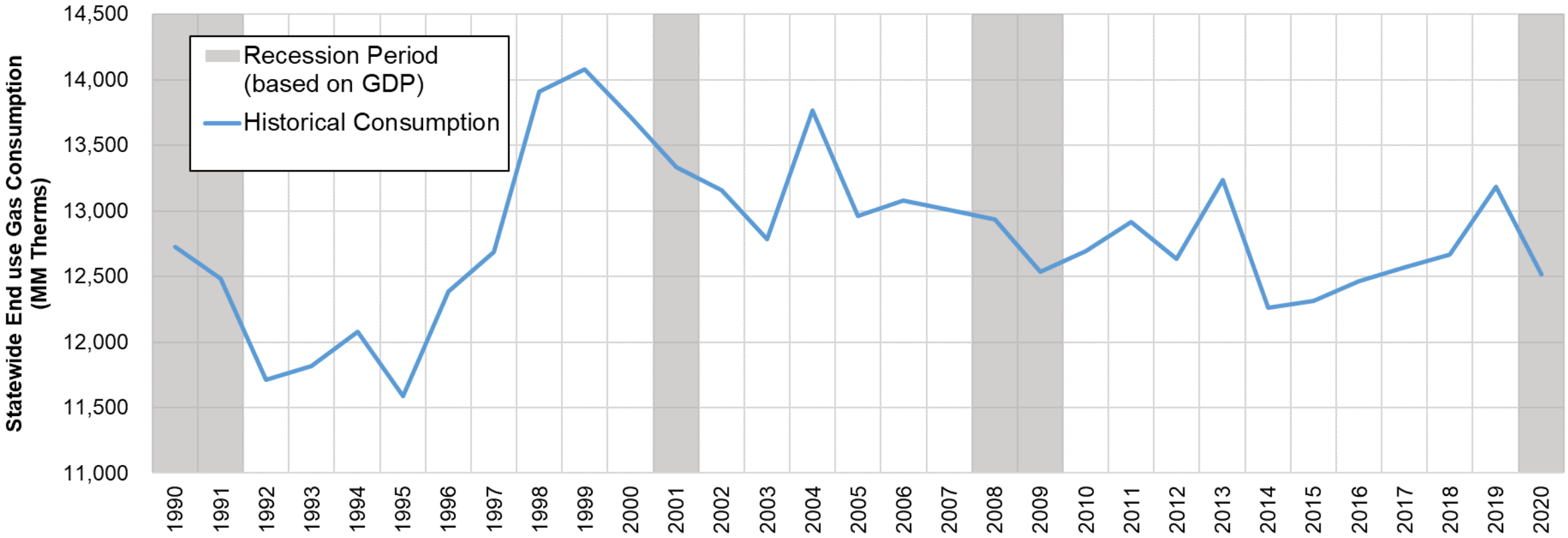
After 2006 several factors are likely leading to the change in trend:

- Long slow economic recovery after 2008 recession
- Increased efficiency and market transformation
- Increasing electricity rates
- Lower population growth



Historic End Use Gas Consumption

- The industrial sector is the largest end-user of gas at ~45% of total usage
- Residential demand has been trending downwards while non-residential is relatively flat
- Increased building efficiency and little growth in industrial sector are likely causes



2020 Recession Impacts

- First look at 2020 history shows expected decreases in electricity and gas consumption
- Impacts below are not weather normalized

Electricity Consumption

- Modest decrease in consumption compared to 2019 (~1.5%)
- Large decrease in non-residential consumption was offset by increased residential consumption

End Use Gas Consumption

- 5% decrease in 2020 vs. 2019
- Decrease mostly driven by non-residential sectors, little change to residential consumption

Next Steps

- ✓Finalize demand model updates
- ✓Draft forecast results available - Mid Nov.
- ✓Final forecast workshop - Dec. 2
- ✓Forecast adoption - Jan. 2022

Thank You!

Historic Weather Trends

August 5, 2021 Workshop – Demand Forecast Inputs and Assumptions

Nick Fugate
Energy Assessments Division

Key Statistics and Uses

Key temperature statistics:

- Daily max631 and minimum temperature
- Heating and cooling degree days

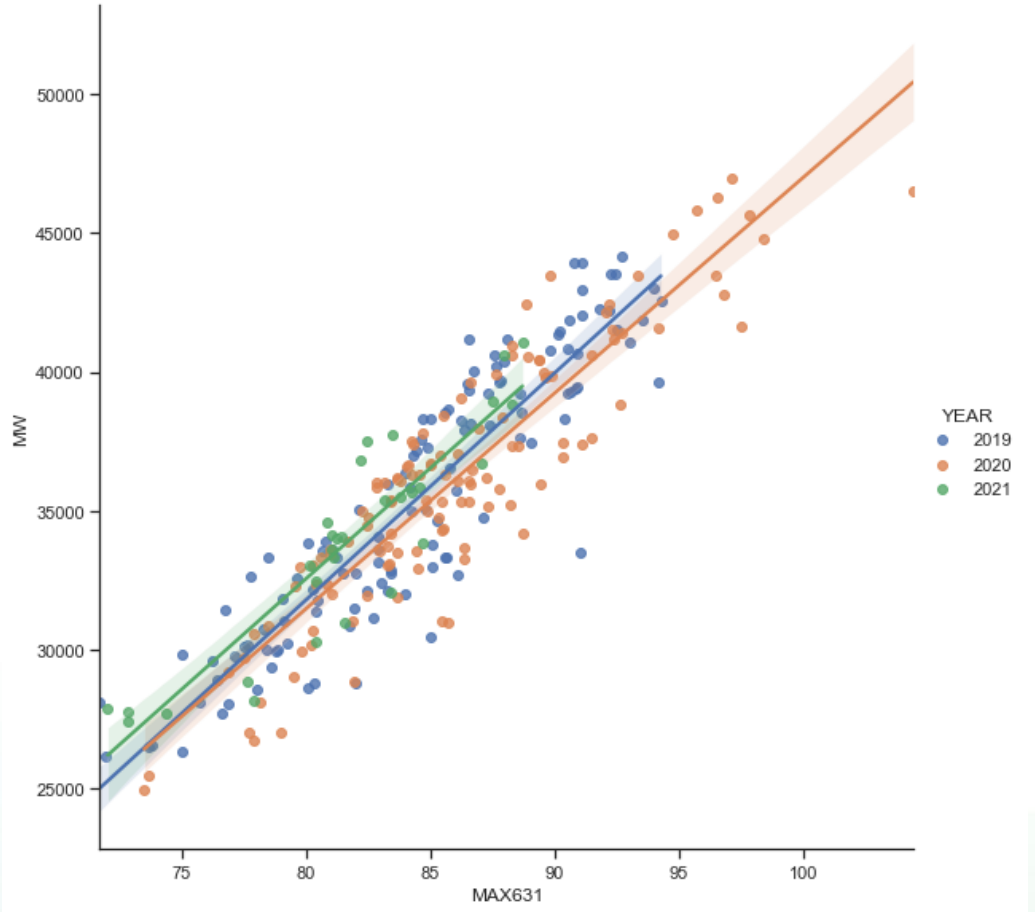
Used in:

- Weather normalizing historic loads
- Peak weather variants (1-in-x)
- Econometric analysis
- Estimating climate change impacts

Normalizing Peak Loads

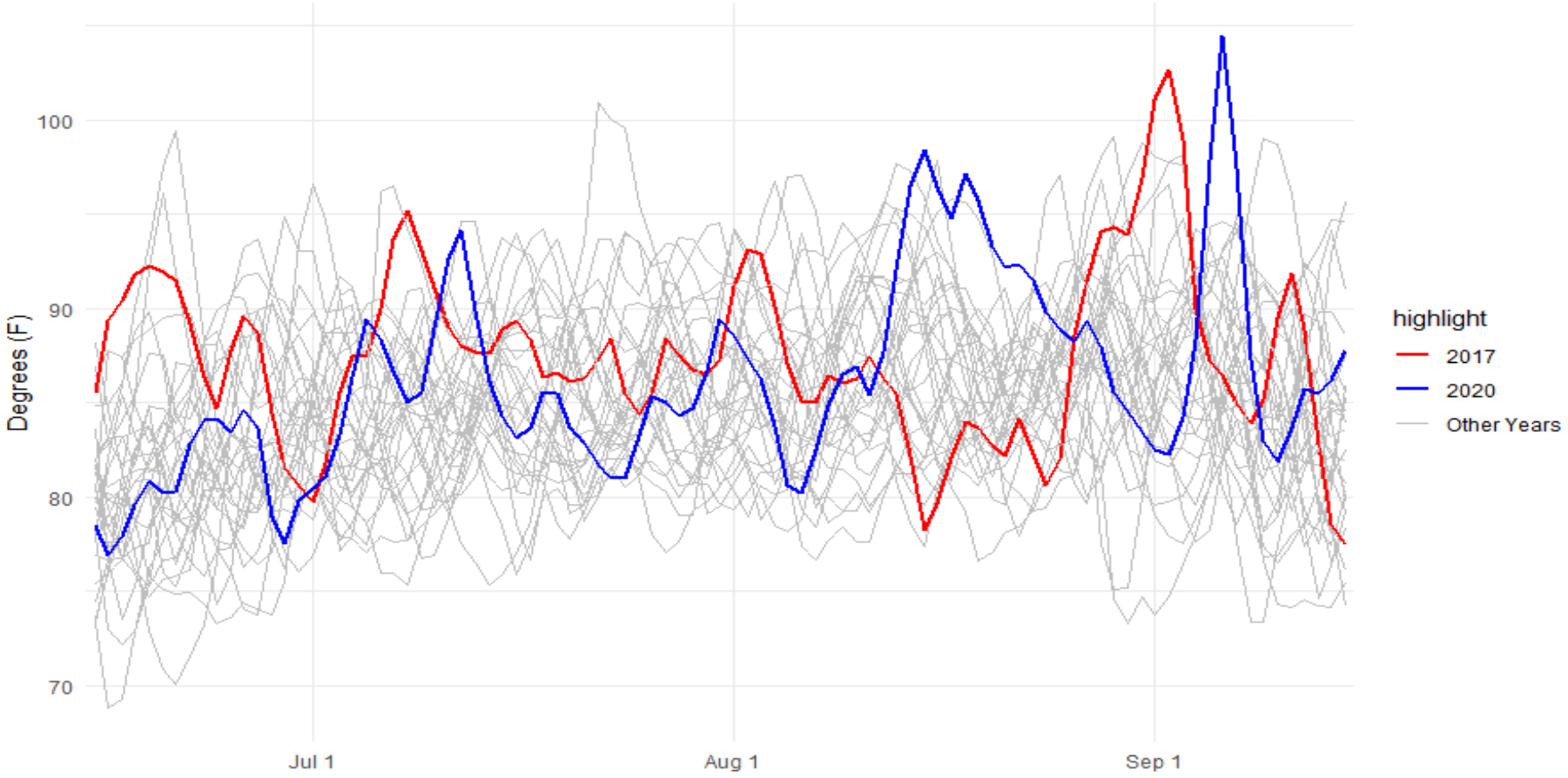
Three-step process:

1. Estimate daily peak load-response to max631 and minimum temperatures (3 years of data)
2. Simulate daily peaks using 30 years of historic temperature data
3. Examine distribution of annual peak loads taken from simulated data to determine 1-in-x peak variants



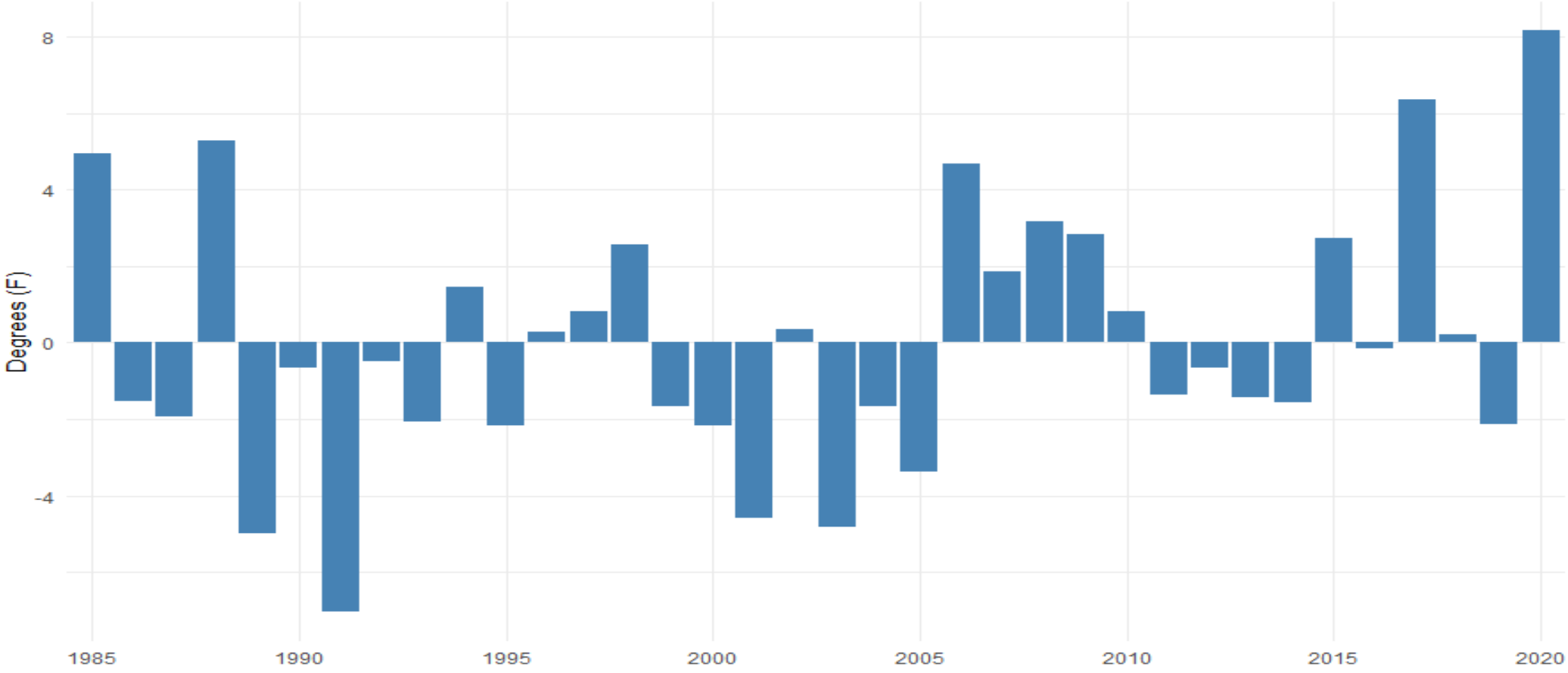
Recent Extreme Temperatures

The hottest single-day events occurred in 2017 and 2020. Temperatures shown are a composite of Max631 across the CAISO control area, dating back to 1985.



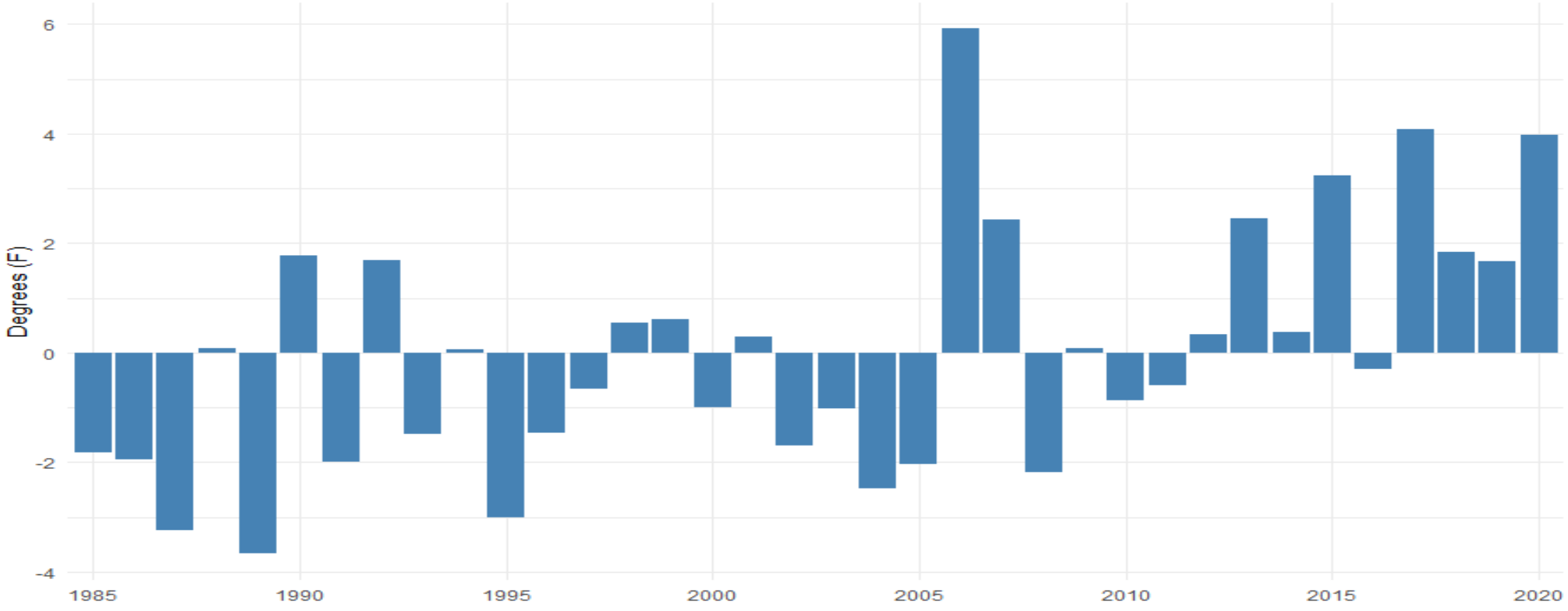
Annual Peak Temps – Max631

The peak max631 event from each summer is shown here relative to the 35-year average of such events. (CAISO composite temperatures)



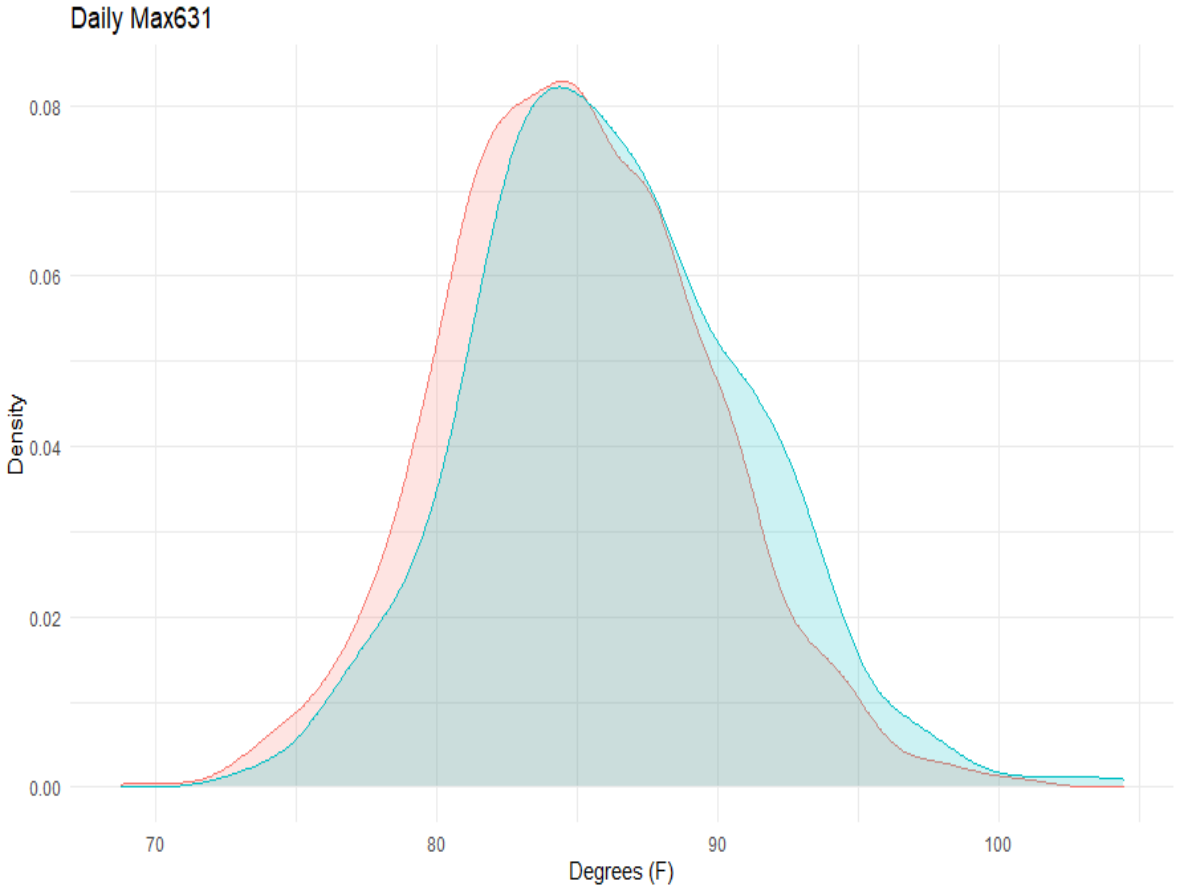
Annual Peak Temps - Minimum

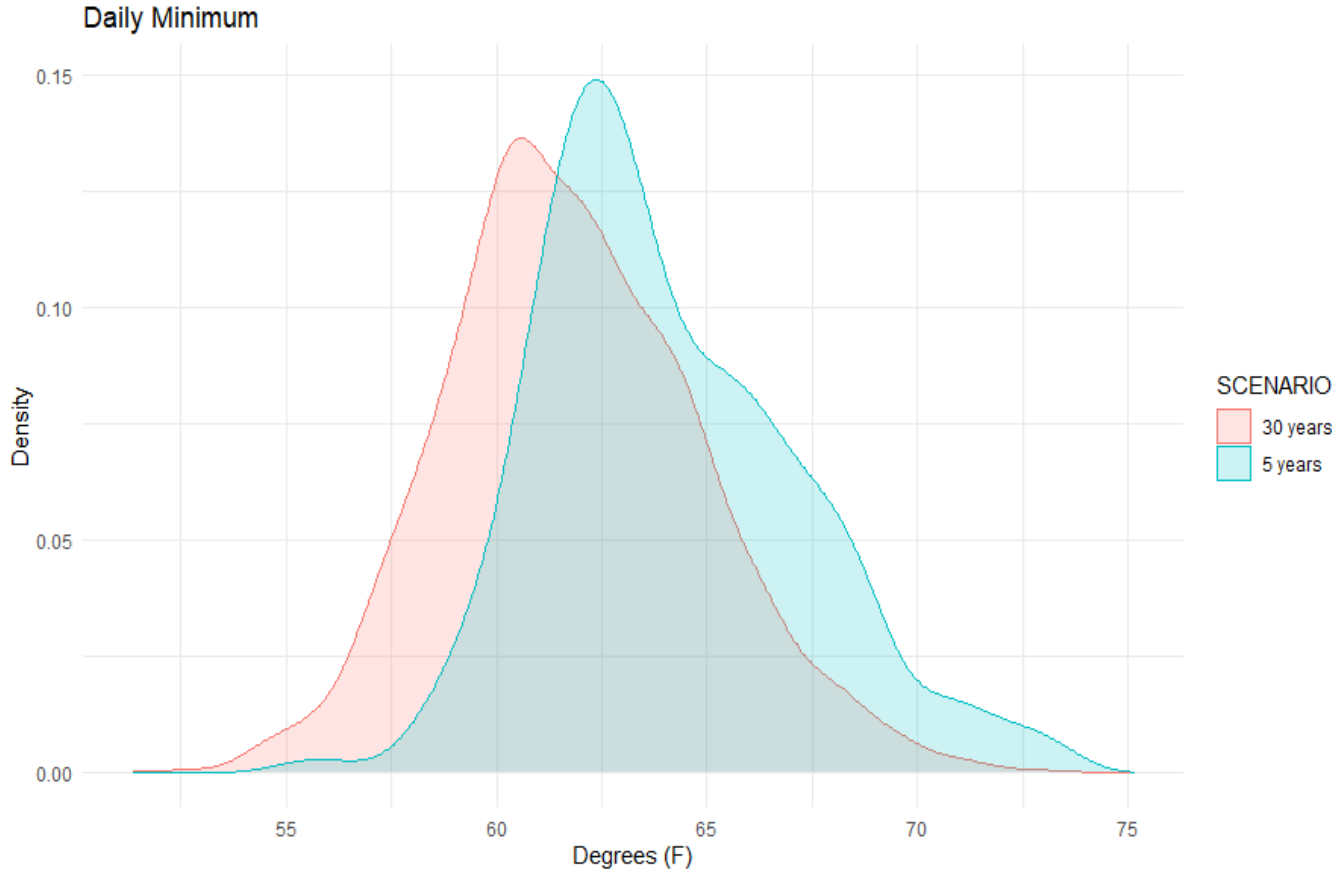
The last 15 years has seen peak minimum temperatures exceed the 35-year average with greater frequency and magnitude. (CAISO composite temperatures)



Daily Temperatures

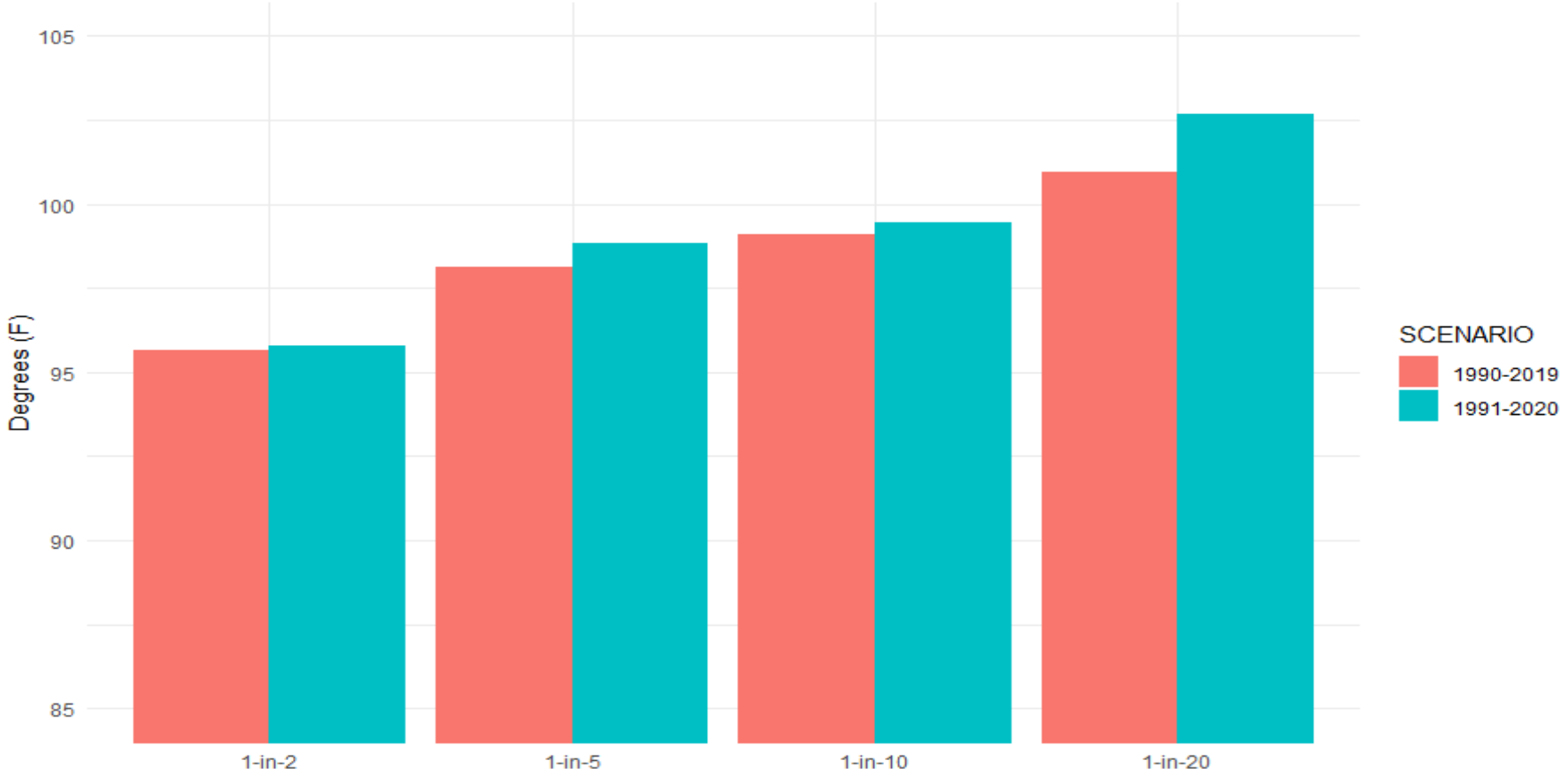
Higher daily temperatures—especially minimum temperatures—occur more frequently in the last five years compared to the prior 30 year period. (CAISO composite temperatures)





Considering Summer 2020

Adding the events of Summer 2020 to the historical record may have little impact on the 1-in-2 determination, but could influence more extreme 1-in-x peak weather variants. (CAISO composite max631 temperatures)



Next Steps

- September DAWG meeting to review weather normalization
- Complete 2021 summer load data received in early October
- Continued collaboration with ERDD on climate assessments

Questions?

Additional Achievable Energy Efficiency & Fuel Substitution

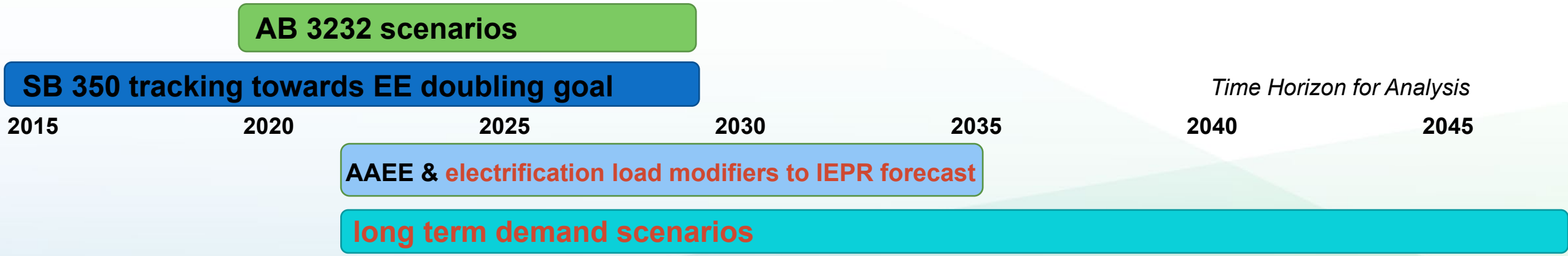
IEPR Commissioner Workshop **August 5, 2021**

Electricity & Natural Gas Demand Forecast: Inputs and Assumptions

Ingrid Neumann, Ph.D.
CEC - EAD

NEW EAD Decarbonization Analysis for 2021 IEPR

- Energy Efficiency (EE) tracking/projections and hourly forecast load modifier
- Building Electrification tracking/projections and hourly forecast load modifier
  - ***Varying time horizons***
  - ***Varying uncertainties***
  - ***Varying uses***
- New long term demand scenarios are being developed to complement the traditional 10-year gas and electricity demand forecast used for energy planning and procurement purposes and may help inform future policy decisions towards California's mid-century climate goals.

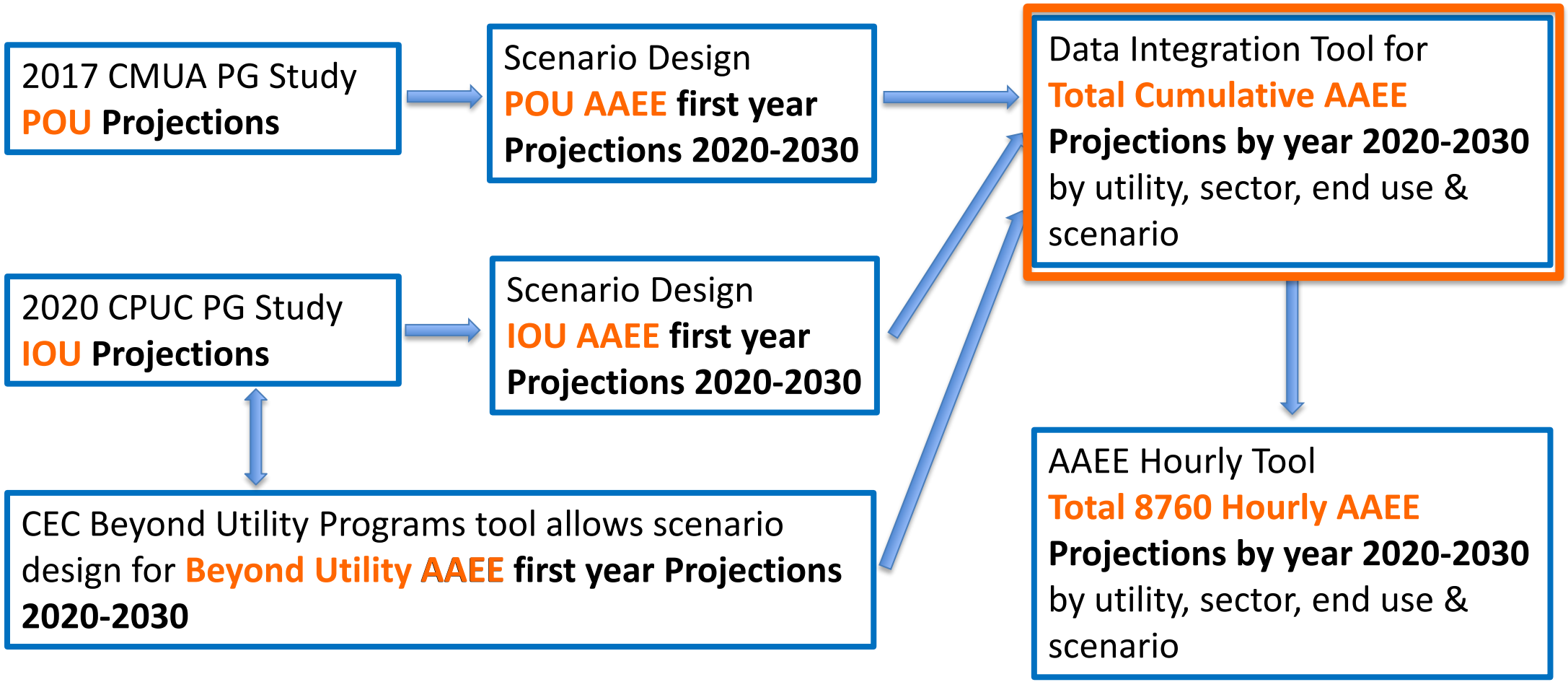


Additional Achievable Energy Efficiency (AAEE)

Single Managed Forecast Set

- *"Energy Commission, in consultation with the CPUC and the CAISO, considered public input in selecting a single or managed demand forecast from the adopted forecast report for use in transmission planning and procurement. This set of forecast numbers is a combination of two forecast components: a base case with weather variants and an additional achievable energy efficiency (AAEE) scenario. Combined together, these create the single or managed forecast."*
- **Three baseline cases and five scenarios of AAEE**
- The mid-AAEE forecast scenario will be used for system-wide and flexibility studies relied upon for procurement and transmission planning purposes.
- Because of the local nature of reliability needs and the difficulty of forecasting locally disaggregated AAEE, the low-mid-AAEE scenario will be used for local studies.

Additional Achievable Energy Efficiency (AAEE)
2019 Process Flow Overview



Scenario Development for 2019 AAEE

Source	Lever		High - Low (Scenario 1)	Mid - Low (Scenario 2)	Mid - Mid (Scenario 3)	Mid - High (Scenario 4)	Low - High (Scenario 5)	Mid - High Plus (Scenario 6)
2017 IEPR	Building Stock		2017 IEPR High-Case	2017 IEPR Mid-Case	**2017 IEPR Mid-Case**	2017 IEPR Mid-Case	2017 IEPR Low-Case	2017 IEPR Mid-Case
	Retail Prices							
Navigant & CEC Processing of 2020 PG Study	AIMS ETs		Reference		**Reference**	Average of Reference & Aggressive		Aggressive
	Incentive Levels		capped at 25% of incremental cost	capped at 50% of incremental cost	**capped at 50% of incremental cost**	capped at 50% of incremental cost		capped at 75% of incremental cost
	C-E Measure Screening Threshold (TRC using 2019 Avoided Costs)		1		1			0.65
	Marketing & Outreach		Default calibrated value		Default calibrated value		Increased Marketing Effort	
	Financing Programs		No modeled impacts		**No modeled impacts**	IOU financing programs broadly available to Res and Com customers		
	Low Income		PG Study Result Unchanged		**PG Study Result Unchanged**	PG Study Result Unchanged		
	BROs Program Assumptions		Reference		**Reference**	Average of Reference & Aggressive		Aggressive
Navigant & CEC Processing of 2020 PG Study AND CEC Processing of WA#2 Results for BU Programs WB	Title 24	Compliance Reduction or Enhancement	no additional included	20% Compliance Rate Reduction	**Reference Case Compliance**	Compliance Enhancements		
		Code Cycles (Vintages)		2022 Nonresidential New Construction and A&A; 2022 Residential A&A *BUWB*			same scope through 2025 Standards *BU WB*	same scope through 2028 Standards *BU WB*
	Title 20	Compliance Reduction or Enhancement	no additional included	20% Compliance Rate Reduction	**Reference Case Compliance**	Compliance Enhancements		
		Code Cycles (Vintages)		Selected Standards through 2022 *PG Study*	Selected Standards through 2022 *PG Study*	Selected Standards Through 2022 *PG Study*	Selected Standards through 2025 *PG Study & BU WB*	*PG Study & BU WB*
	Federal Standards	Compliance Reduction or Enhancement	no additional included		**Reference Case Compliance**	Compliance Enhancements		
		Code Cycles (Vintages)			**through 2023 (excluding 2020 GSL Std) + 2026 Water Source Heat Pump *PG Study***	through 2023 (excluding 2020 GSL Std) + 2026 Water Source Heat Pump *PG Study & BU WB*	through 2023 + 2026 Water Source Heat Pump (including 2020 GSL Std expanded scope) *PG Study & BU WB*	all through 2026 Water Source Heat Pump + selected standards through 2030 *PG Study & BU WB*
CEC Processing of WA#2 Results for BU Programs WB	Prop 39		**mid**: established programs with historical performance data and expected future funding allocations				high	
	DGS Energy Retrofit							
	ECAA Financing							
	GGRF: Water Energy Grant							
	GGRF: Low Income Weatherization							
	Local Government Ordinances		low		**mid**: limited historical data on a pilot or other subset of programs and reasoned assumption on future funding allocations			
	PACE Financing							
	Benchmarking and Public Disclosure							
	Fuel Substitution							
	Behavioral, Retrocommissioning, Operational Savings		not included				low	**mid**: assumptions based on pilot or proposed programs
	Local Government Challenge							
	Energy Asset Rating							
	Smart Meter Data Analytics							
	Air Quality Management District		not included					**mid**: limited assumptions based on pilot or proposed programs
	Agricultural							
	Industrial							
	Conservation Voltage Reduction							
CEC Processing of WA#1 Results based on 2017 CMUA PG Study	Expand Measure List		Reference		Reference	Add new measures		
	Incentive Level		Reference x 75%			Reference		
	Promotional Expenditures		Reference x 75%			Reference x 125%		
	Behavioral Programs		Reference			Reference		
	Early Retirement Programs		Reference			Implementation Program		
	IOU or POU Net to Gross		IOU					
	Re-participation Rates							

IOU Potential Program Savings

Codes and Standards Savings

Beyond Utility Program Savings

POU Potential Program Savings

Proposed 2021 AAEE

- ***For 2021 we will be using the same saving accounting, aggregation, and extrapolation methodology & tools as were developed for 2019 with the addition of some new capabilities***
  - ***Hourly GHG savings from gas and electric EE***
  - ***Extrapolation of potential savings out to 2050***

- Historical data and potential savings projections are being updated
- Some beyond utility workbooks are being removed while others are being added or enhanced based on recent programmatic activities

Additional Achievable Fuel Substitution (AAFS)

What FS was included in 2019?

- Used a “what-if” percentage of all electric new construction in 2019 Additional Achievable Energy Efficiency (AAEE)

- Used **low** for AAEE 1&**2**, **mid** AAEE **3**&4, high AAEE 5&6
  - **Low**: Assumed all electric penetration rate of 0.5% per year beginning 2020, ramping linearly to a cumulative of **5.5%** in 2030
  - **Mid**: Assumed all electric penetration rate of 1.5% per year beginning 2020, ramping linearly to a cumulative of **16.5**% in 2030
  - High: Assumed all electric penetration rate of 2.5% per year beginning in 2020, ramping linearly to a cumulative of 27.5% in 2030

What work has EAD done since then?

- Developed “what-if” Fuel Substitution Scenario Analysis Tool (FSSAT)
  - Used the FSSAT to analyze building electrification scenarios in our AB 3232 Analysis described in the recently published California Building Decarbonization Assessment

- Each of the electrification scenarios meeting or exceeding the AB3232 target have substantial incremental electric energy added due to electrification efforts
  - In addition to increasing peak loads electrification can shift the dates and times of these peaks; winter loads are affected more than summer loads

- AB 3232 analysis based on “what if”; can’t use AB 3232 scenarios as a starting point for AAFS
- We are currently working with GH on incorporating more program-oriented inputs in our improved EE/FS analysis tools for use in the 2021 IEPR

Use AAEE as a template for AAFS

- ***For 2021 we wish to develop Additional Achievable Fuel Substitution (AAFS) as an hourly load modifier to the baseline demand forecast.***

- AAFS is conceptualized as separate from AAEE
- We wish to use a manner similar to the one which was developed for AAEE for AAFS; ie. a “template”
  - AAEE genesis occurred in 2009 with an analysis of “incremental, uncommitted” EE savings
  - 2013 the Joint Agencies developed the “single forecast set” language and formalized it in 2014

Scenario Development for 2021 AAFS

- **JASC presentation and robust discussion June 4**
- **DAWG stakeholder workshop June 23**

The next step would be defining a mutually agreed upon process for incorporating building electrification into the IEPR Demand Forecast such that it is useful to the joint agencies and their stakeholders.

- As in the 2019 AAEE forecast, and before, the objective is to continue to focus on firm programs and projections since the core scenarios will be used for planning and procurement purposes
- As in previous iterations, develop variations around these most probable futures to show other possible outcomes given less or more effort input to realize the potential of existing or proposed EE and FS programs

Proposal for 2021 AAFS Development
Elements to be included in AAFS

Potential AAFS data sources for scenario creation
(different level of stringency for each, which have their own level of uncertainty)

- 2021 PG Study measures
- Local ordinances
  encouraging electrification of some or all end-uses as well as local natural gas bans
- 2022 Building Standards
  proposing all electric baselines for prescriptive compliance for new construction
- POU data on recent fuel substitution activities
  (especially SMUD, LADWP, Palo Alto)
- IOU data (CEDARS) on recent fuel substitution activities
- BUILD/TECH programs being rolled out per SB 1477
- Programs operating outside of Utility EE Portfolios
  (ex. SCE San Joaquin program electrifying propane)
- Incorporate transportation electrification
  (Governor's E.O. banning sales of new ICE in 2035)

Proposal for 2021 AAFS Development
Possible approach to Scenarios

Preliminary thoughts on what could go into a hypothetical set of AAFS scenarios 1-6 ranging from most conservative to most aggressive or optimistic

"Firm commitments" including only anticipated all electric new construction due to currently existing local ordinances and existing Utility programs with compliance rates, participation, and funding ratcheted down from standard values.

Add all electric new construction as expected to be encouraged by the proposed T24 update to the below.

“Firm commitments”

The below using standard values for compliance rates, participation, and funding plus the addition of some firmer funded programs such as BUILD/TECH.

new construction as expected from the proposed T24

“Firm commitments”

Ratchet all of the below elements up beyond standard values for compliance rates, participation, and funding.

addition of some firmer funded programs such as BUILD/TECH

new construction as expected from the proposed T24

“Firm commitments”

A scenario which includes the below and adds more speculative programs in order to meet minimum AB 3232 goals for the Residential and Commercial Sector.

Ratchet all of the below elements up beyond standard values for compliance rates, participation, and funding.

addition of some firmer funded programs such as BUILD/TECH

new construction as expected from the proposed T24

“Firm commitments”

A scenario which includes the below and expands speculative programs further to meet economywide mid-century GHG reduction goals.

Add more speculative programs to meet minimum AB 3232 goals

Ratchet all of the below elements up beyond standard values for compliance rates, participation, and funding.

addition of some firmer funded programs such as BUILD/TECH

new construction as expected from the proposed T24

“Firm commitments”

Proposal for 2021 AAFS Development

Consideration of which AAFS & AAEE Scenario's are compatible

- Need to consider which combinations of AAEE/AAFS scenarios are compatible with each other given total gas displacement potential and program funding sources.

Consideration of who will use 2021 AAFS and for what purpose

- By adding AAFS, we will need to revisit our common set forecasting agreement language after it has been determined what agencies want for what purpose.

Timeline for 2021 AAEE & AAFS

- **August 5:**
  IEPR Workshop Demand Forecast Inputs and Assumptions

- **Mid August:**
  JASC Staff level discussion on AAEE & AAFS Preliminary Scenario Designs

- **Late August:**
  DAWG AAEE & AAFS Preliminary Scenario Designs

- **Late September:**
  DAWG AAEE & AAFS Preliminary Scenario Results

- **December 2: IEPR WS to share Final Results of Managed Forecast including AAEE & AAFS modifiers**

Public Comments

Zoom:

- Use the “raise hand” feature to make verbal comments

Telephone:

- Dial *9 to raise your hand
- *6 to mute/unmute your phone line. You may also use the mute feature on your phone.

When called upon:

- Your microphone will be opened
- Unmute your line
- Spell your name for the record, then start your comments

Limited to 1 minute per person and 1 representative per organization.

1-MINUTE TIMER

Public Comment

Zoom:

- Use the “raise hand” feature to make verbal comments

Telephone:

- Dial *9 to raise your hand
- *6 to mute/unmute your phone line. You may also use the mute feature on your phone.

When called upon:

- Your microphone will be opened
- Unmute your line
- Spell your name for the record, then start your

Limited to 1.5 minutes per person and 1 representative per organization.

1.5-MINUTE TIMER

Public Comment

Zoom:

- Use the “raise hand” feature to make verbal comments

Telephone:

- Dial *9 to raise your hand
- *6 to mute/unmute your phone line. You may also use the mute feature on your phone.

When called upon:

- Your microphone will be opened
- Unmute your line
- Spell your name for the record, then start your

Limited to 2 minutes per person and 1 representative per organization.

2-MINUTE TIMER

Public Comment

Zoom:

- Use the “raise hand” feature to make verbal comments

Telephone:

- Dial *9 to raise your hand
- *6 to mute/unmute your phone line. You may also use the mute feature on your phone.

When called upon:

- Your microphone will be opened
- Unmute your line
- Spell your name for the record, then start your comment

Limited to 1 representative per organization.

TIMER

Closing Remarks

Submit written comments from the 2021 IEPR page:

- Click on **“21-IEPR-03 - Electricity and Gas Demand Forecast”**
- Click on **“Submit e-Comments (21-IEPR-03)”**
- Comments are due August 19, 2021

Please join us for the afternoon session, 2:00 pm

- Forecast Modeling Inputs & Analysis
- **Webinar ID:** 973 7630 6780
- **Webinar Passcode:** IEPR2021

Break

The IEPR Commissioner Workshop on

Electricity and Natural Gas Demand Forecast: Inputs and Assumptions

will resume at X:00 PM

We appreciate your patience