

# CCA FEASIBILITY STUDY FOR ALAMEDA COUNTY DRAFT RESULTS

MAY 4, 2016

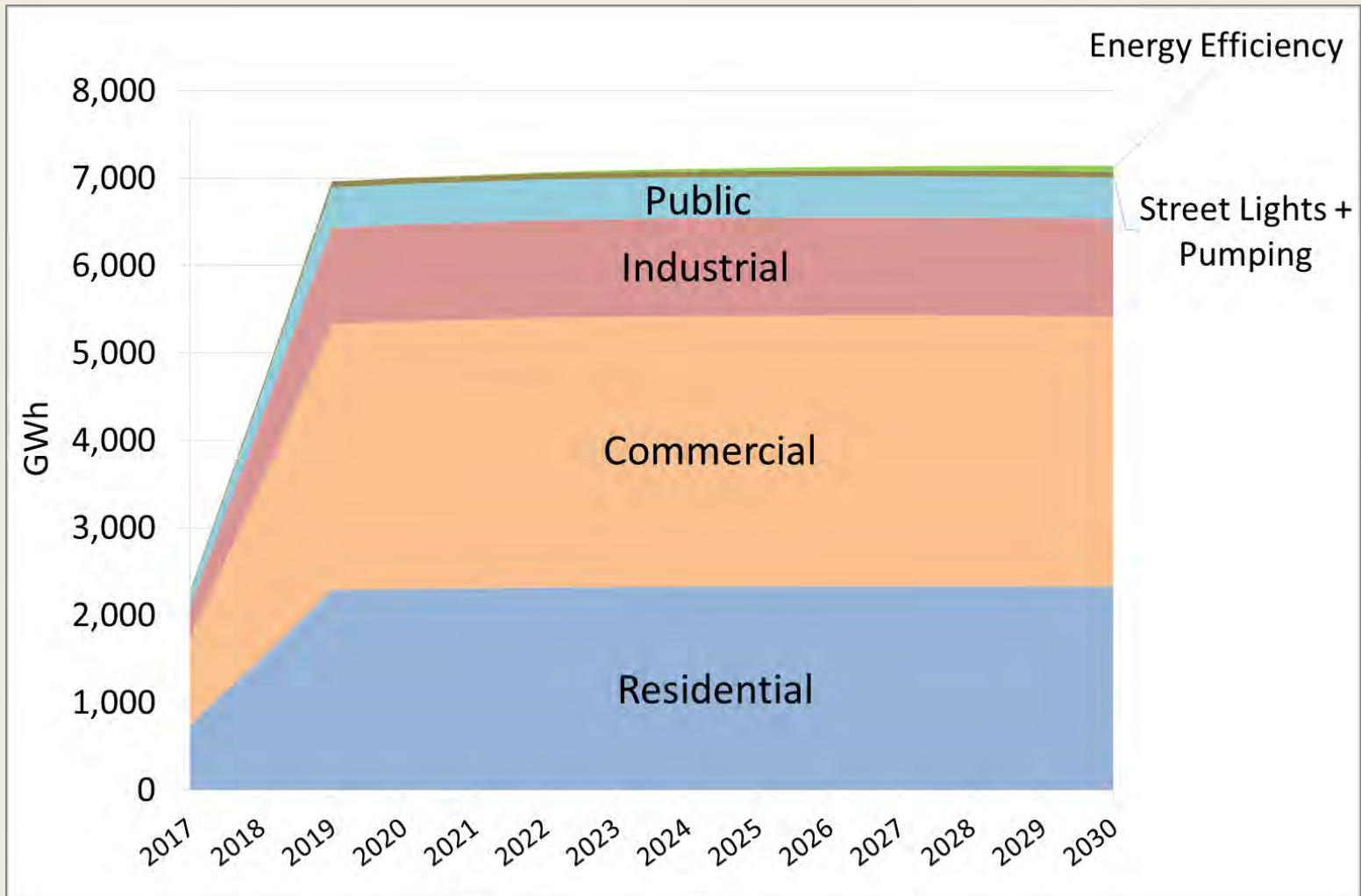
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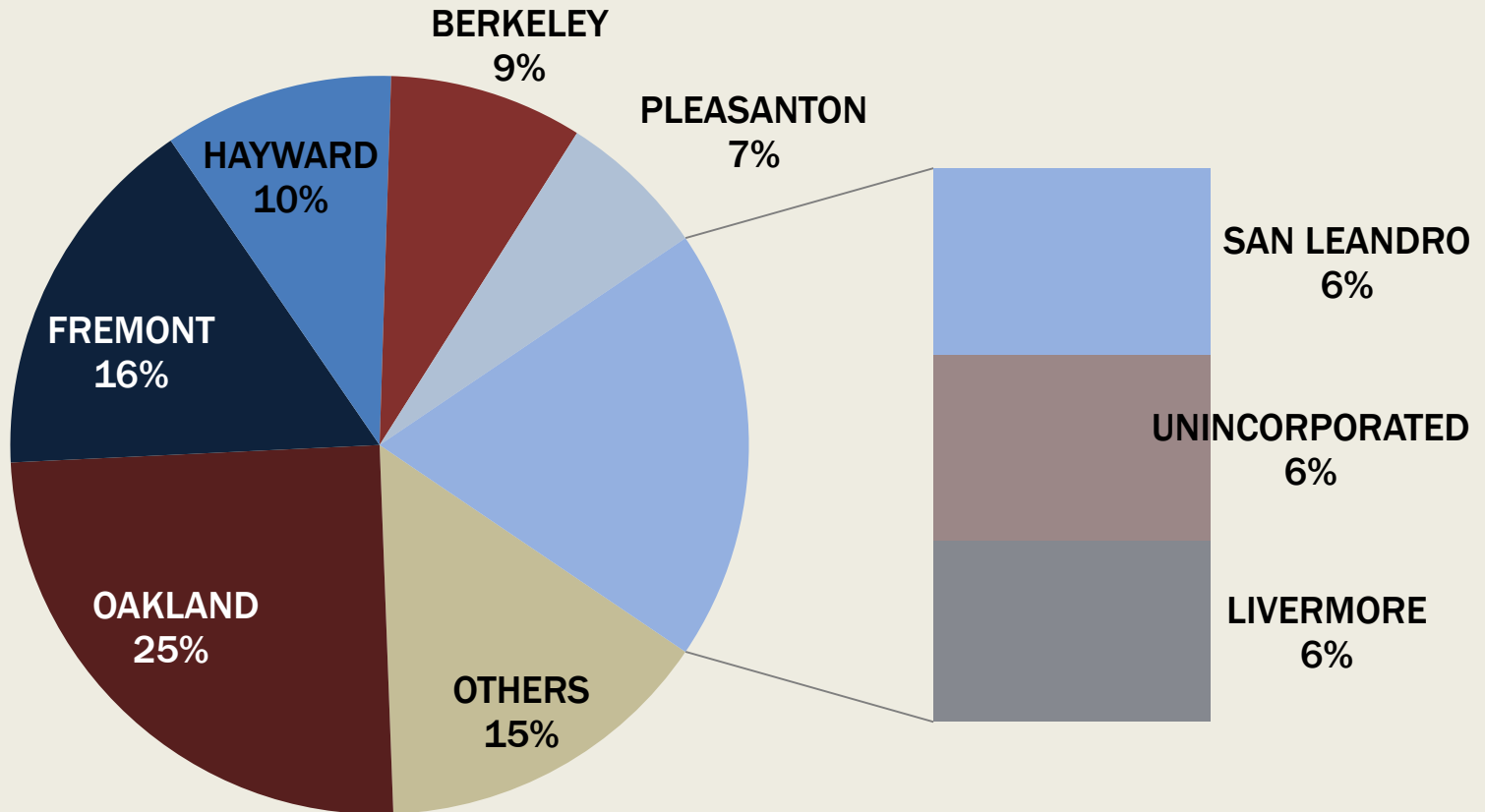
# TONIGHT'S PRESENTATION

- **Loads and Forecasts**
- **Analysis Approach**
- **Results**
- **Risks and Sensitivities**
- **Energy Efficiency Impacts/Implications**
- **Macroeconomic Implications**
- **Conclusions/Next Steps**

# LOADS AND FORECAST



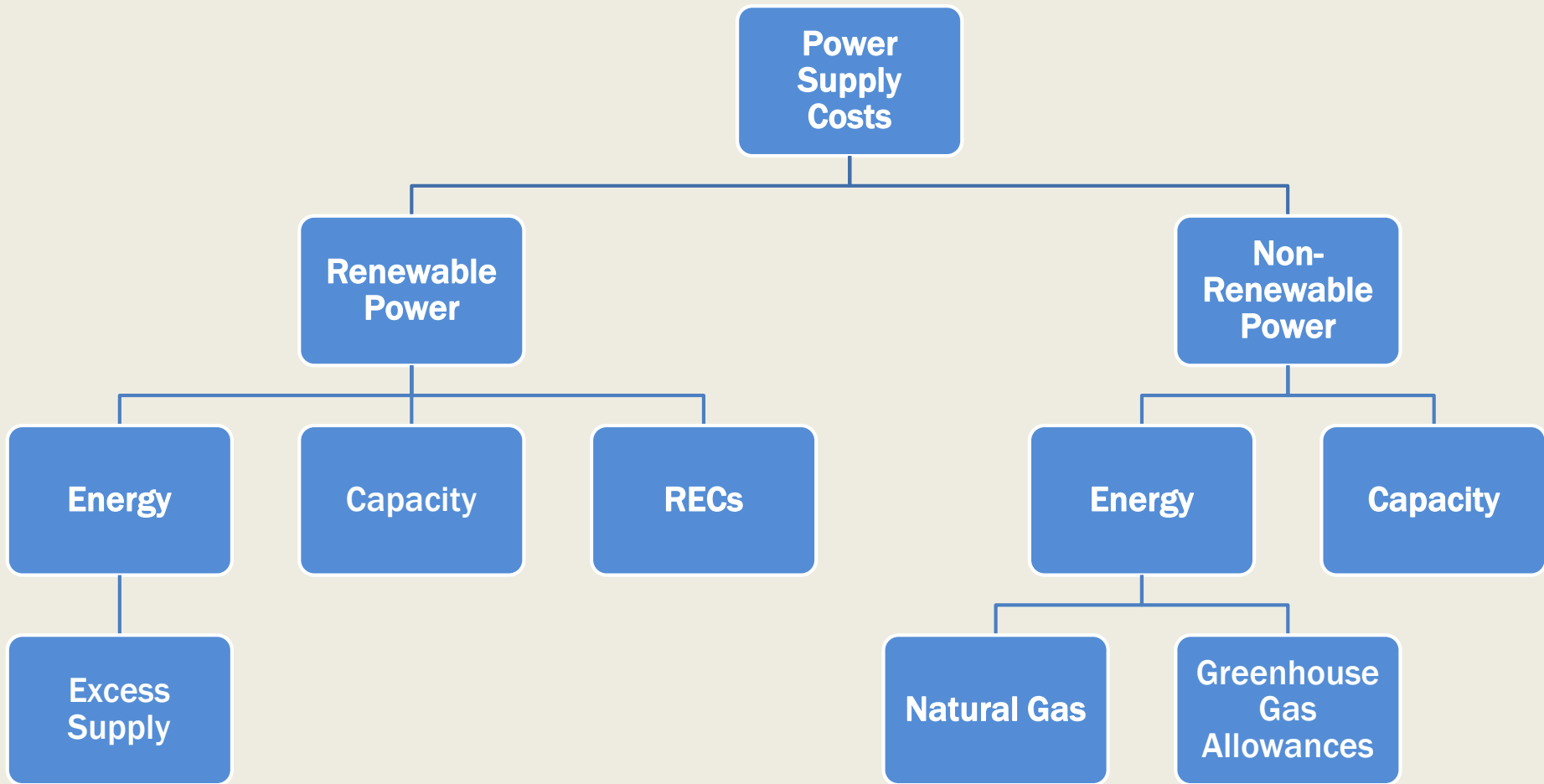
# LOAD BY JURISDICTION



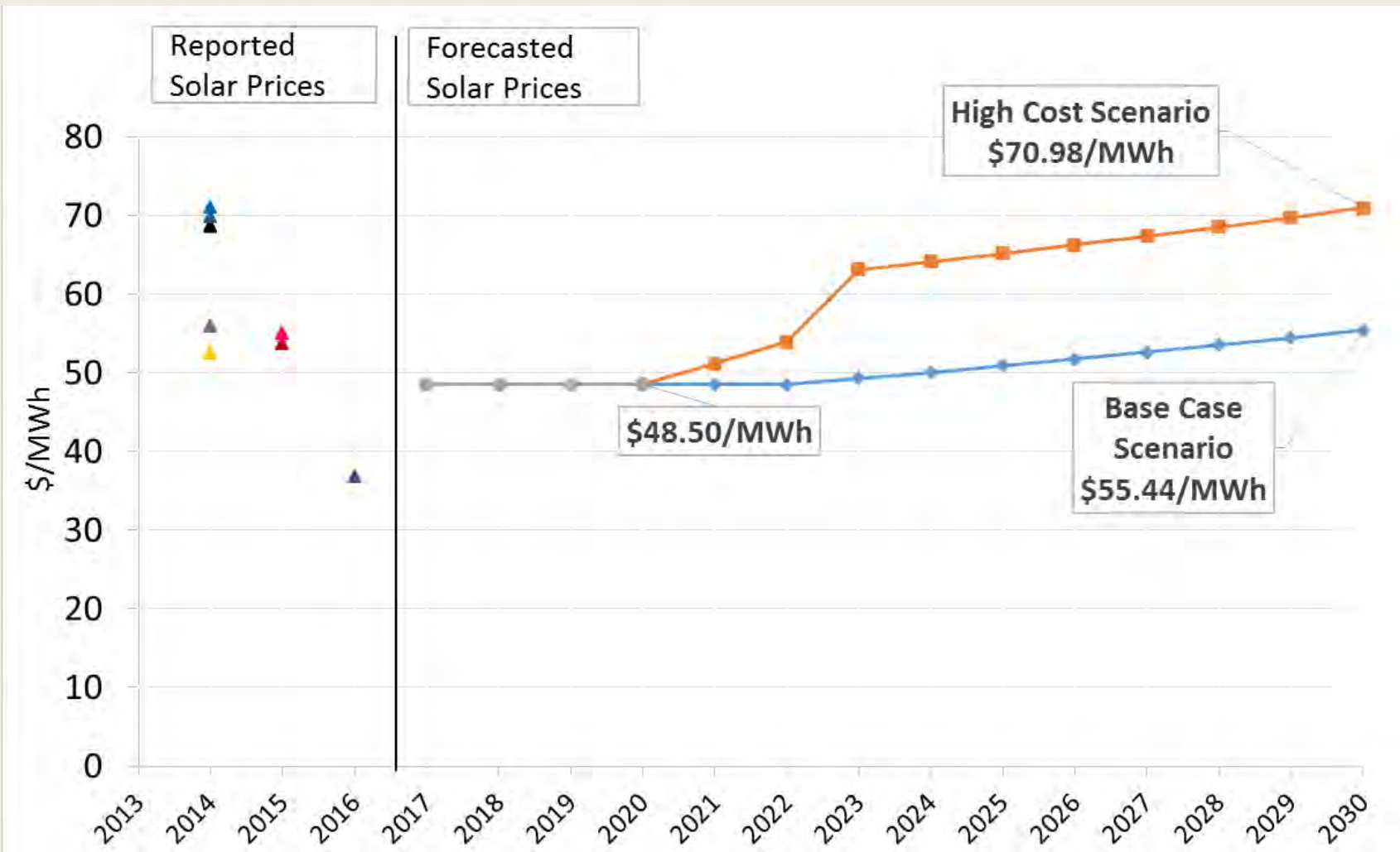
# POWER SUPPLY PROCUREMENT

- **Power supply procurement objectives**
  - Balancing hourly supply/demand
  - Meet resource adequacy requirements
  - Meet RPS requirements /CCA renewable targets
  - Local generation
  - Compete with PG&E rates
- **This Analysis:**
  - RPS portfolio ratio of 45:45:10 solar:wind:baseload (e.g., geothermal)
  - Up to 10% of renewable supply by 2030 from local solar resources
  - Balance of supply from non-renewable market purchases
  - RPS contract and non-renewable market prices same for CCA and PG&E
    - RPS prices driven by assumptions regarding future tax credits
  - Premium for Alameda County solar included in cost forecast
    - Solar generation projects in Alameda Co: 15% cost premium
    - Smaller local projects (<3 MW): 55% premium over large projects

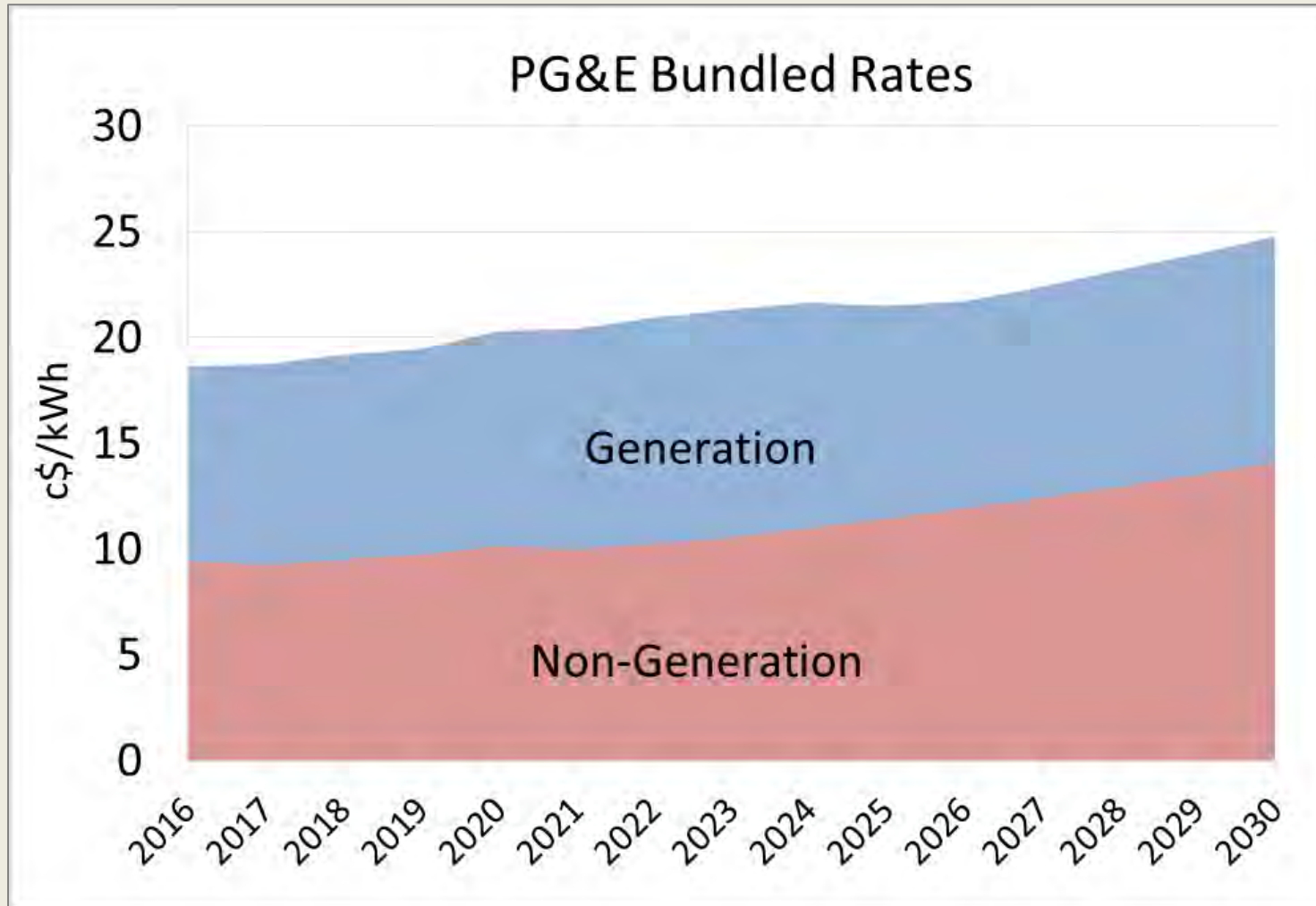
# ANALYSIS APPROACH: POWER SUPPLY



# RENEWABLE POWER SUPPLY PRICES



# FORECAST BY RATE CLASS



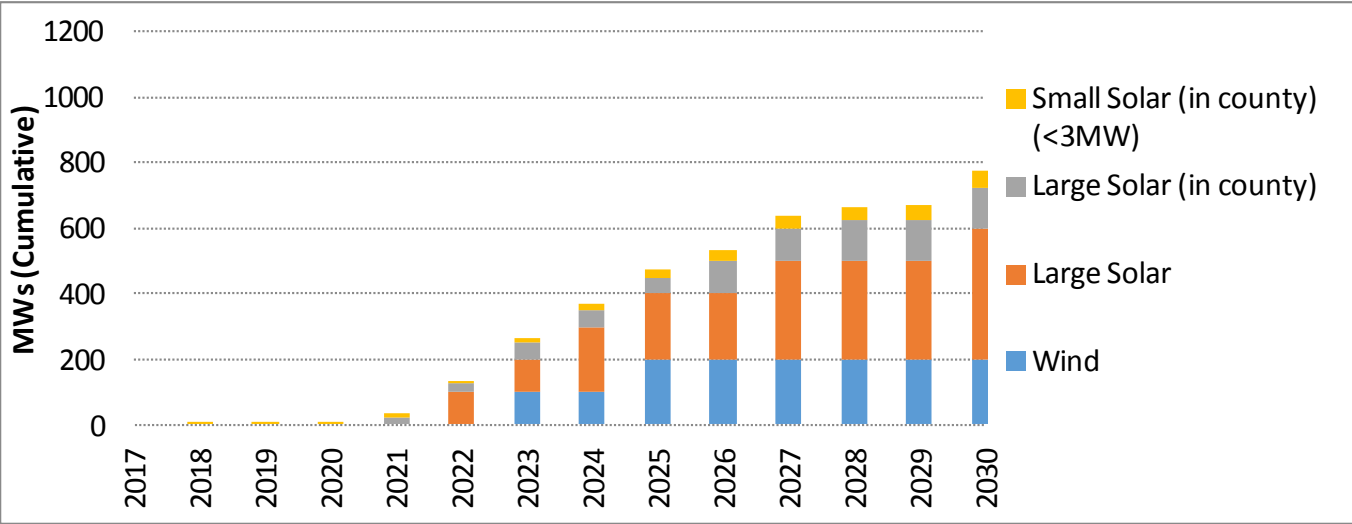


# RESULTS: THREE SCENARIOS

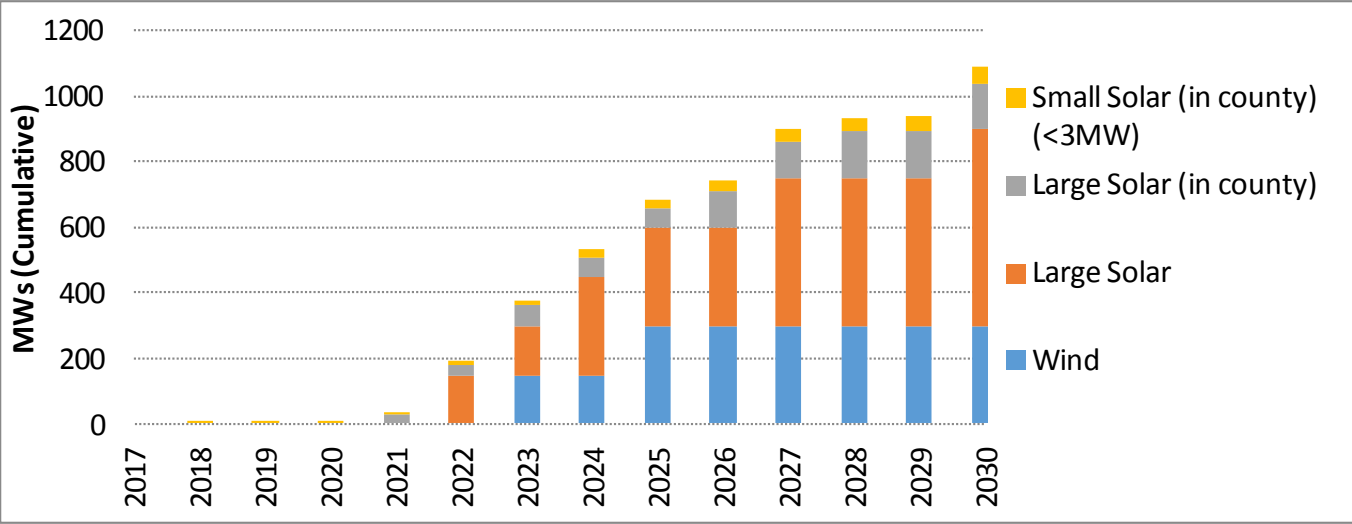
1. Minimum RPS Compliance: 33%  $\Rightarrow$  50% qualifying renewables
2. More Aggressive: Initially 50% with lower GHG emissions
3. Ultra-Low GHG: 50%  $\Rightarrow$  80% by year 5

# RENEWABLE BUILD-OUT

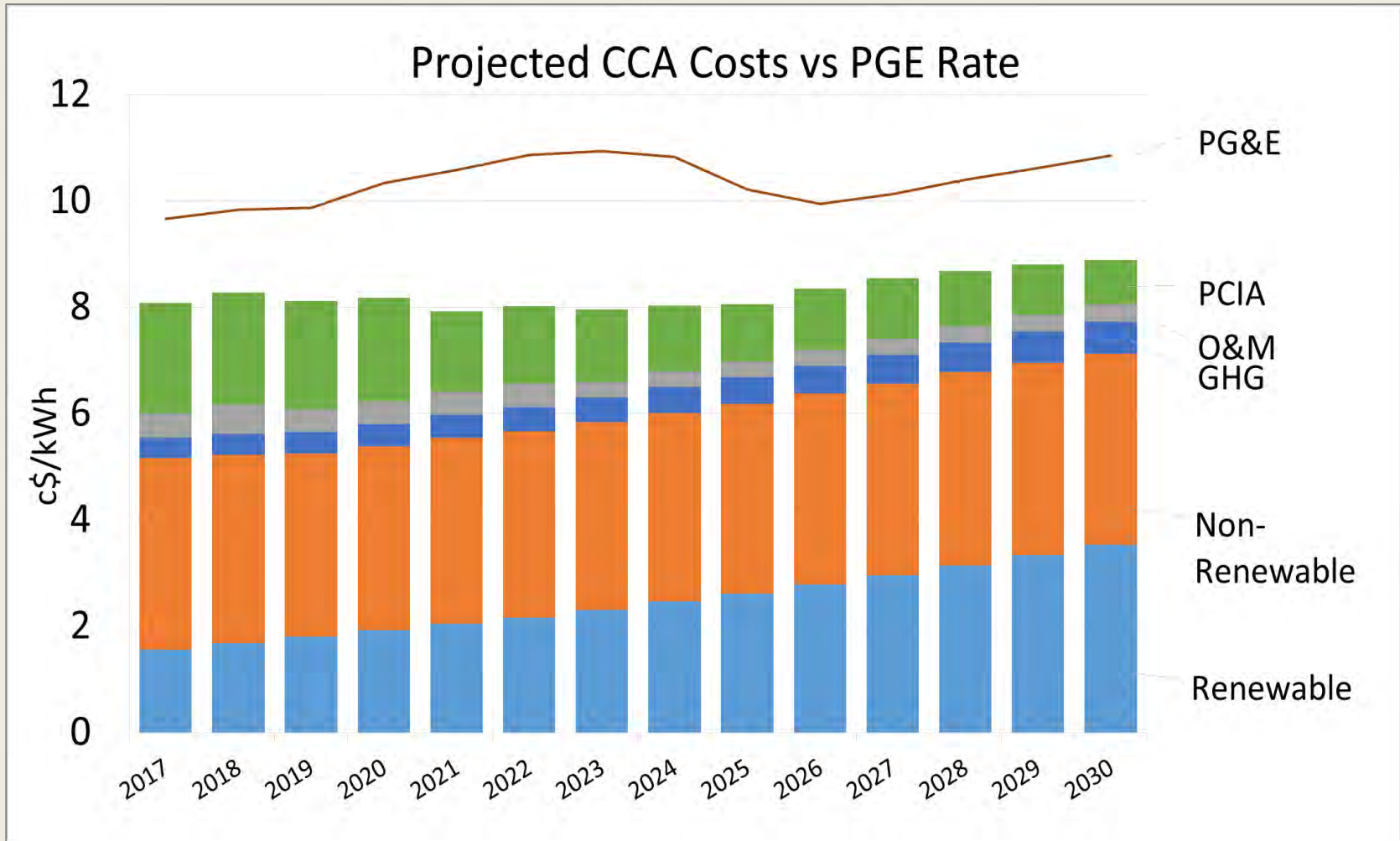
## SCENARIO 1



## SCENARIO 3



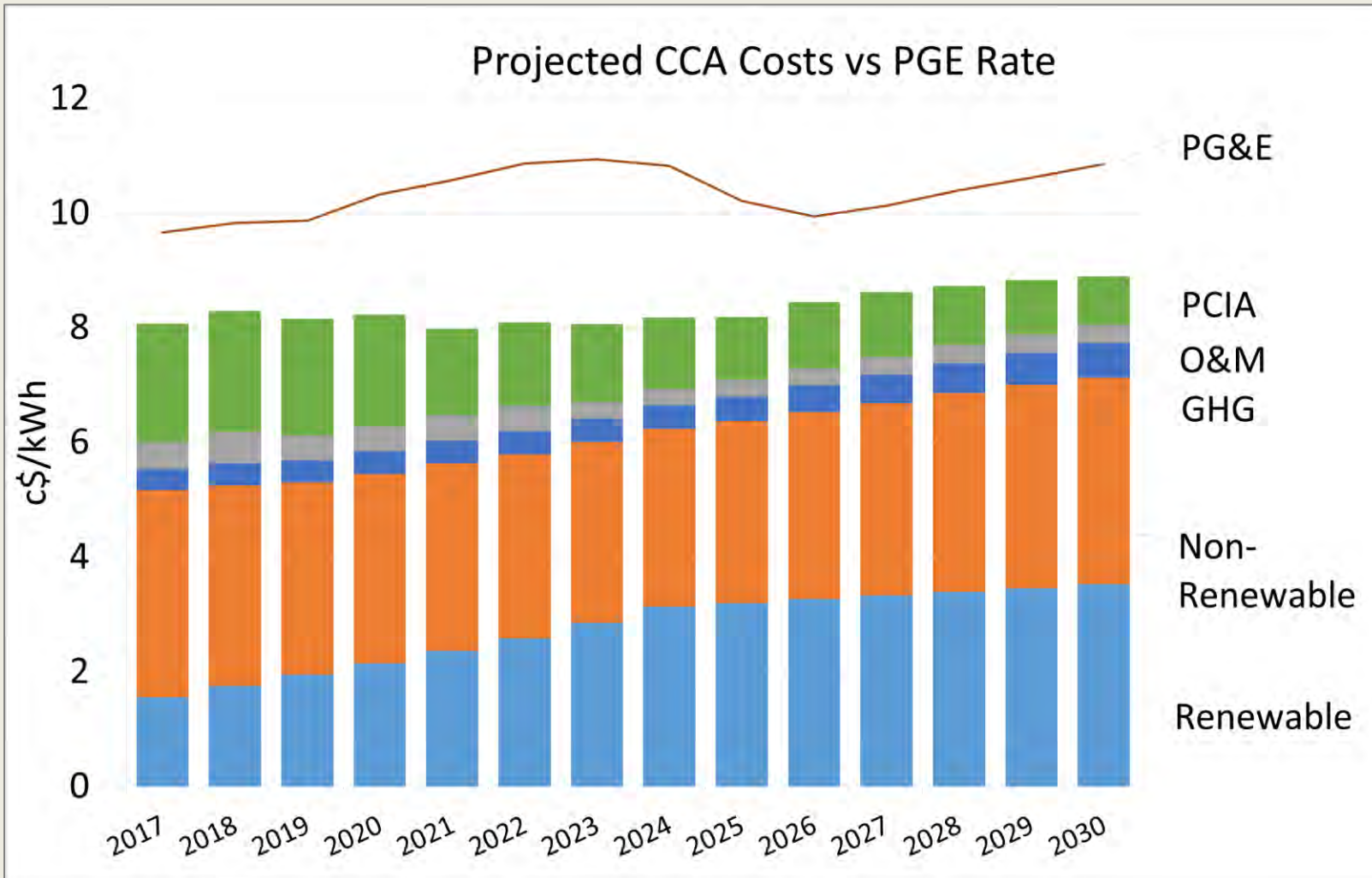
# RESULTS: SCENARIO 1 (RPS)



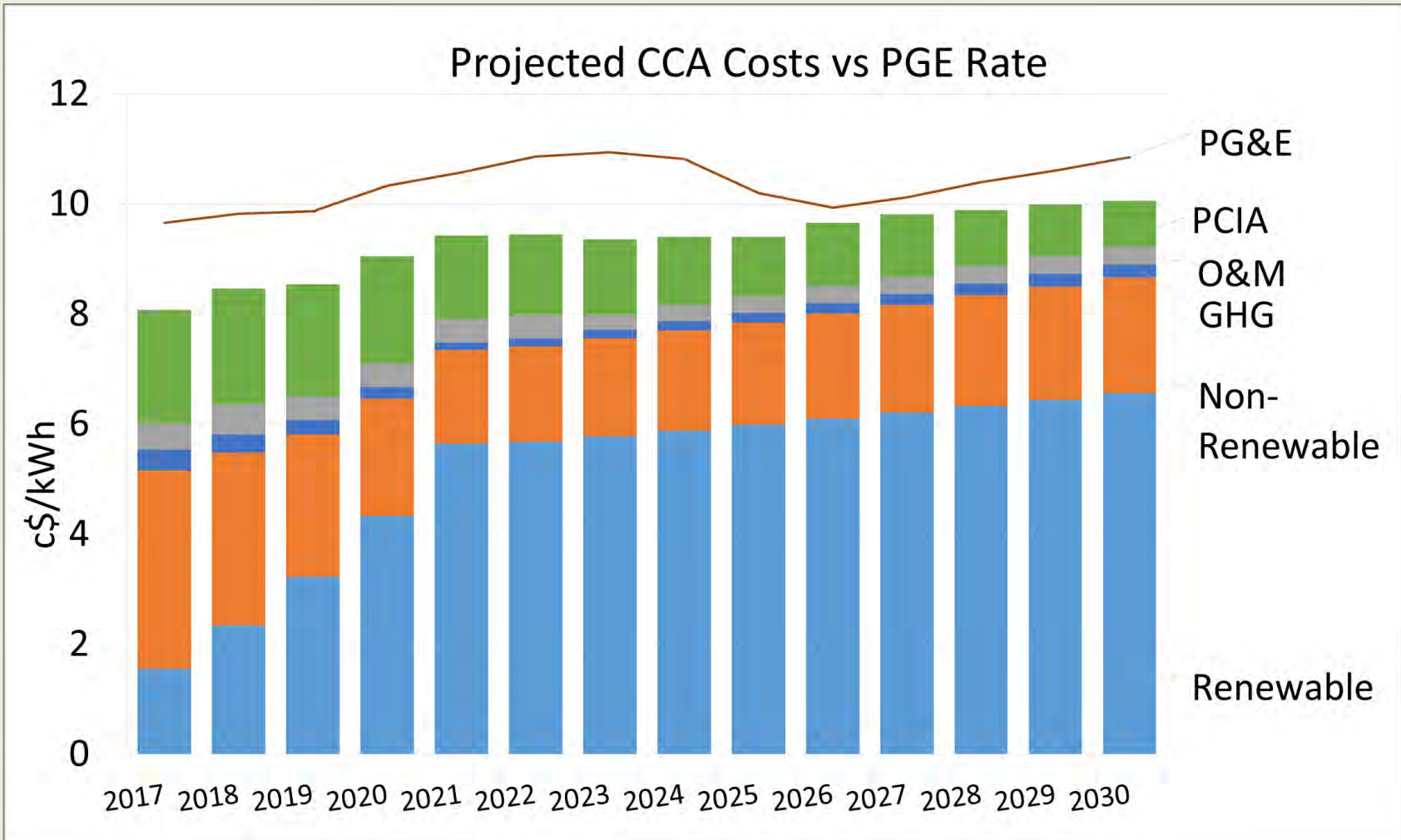
# AVERAGE BILL SAVINGS - RESIDENTIAL

<b>Residential</b>	<b>Monthly Consumption (kWh)</b>	<b>Bill with PG&amp;E (\$)</b>	<b>Bill with Alameda CCA (\$)</b>	<b>Difference (\$)</b>
<b>2017</b>	650	148	141	7
<b>2020</b>	650	160	144	16
<b>2030</b>	650	202	186	15

# RESULTS: SCENARIO 2 (ACCELERATED RPS)

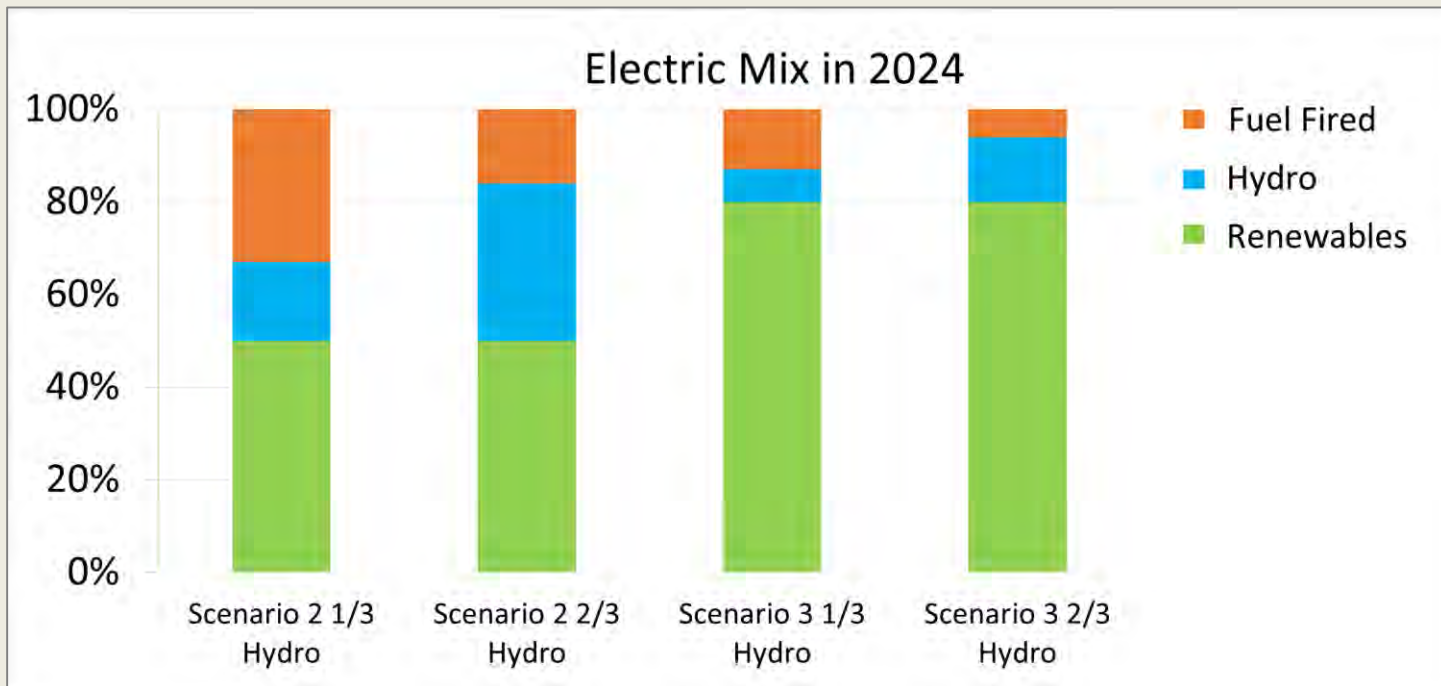


# RESULTS: SCENARIO 3 (80% BY YEAR 5)



# RESULTS: GHG SAVINGS

Total GHG savings (MMTonnes)	Scenario 2 1/3 Hydro	Scenario 2 2/3 Hydro	Scenario 3 1/3 Hydro	Scenario 3 2/3 Hydro
<b>2017-2030</b>	1.8	4.6	11.2	13.2



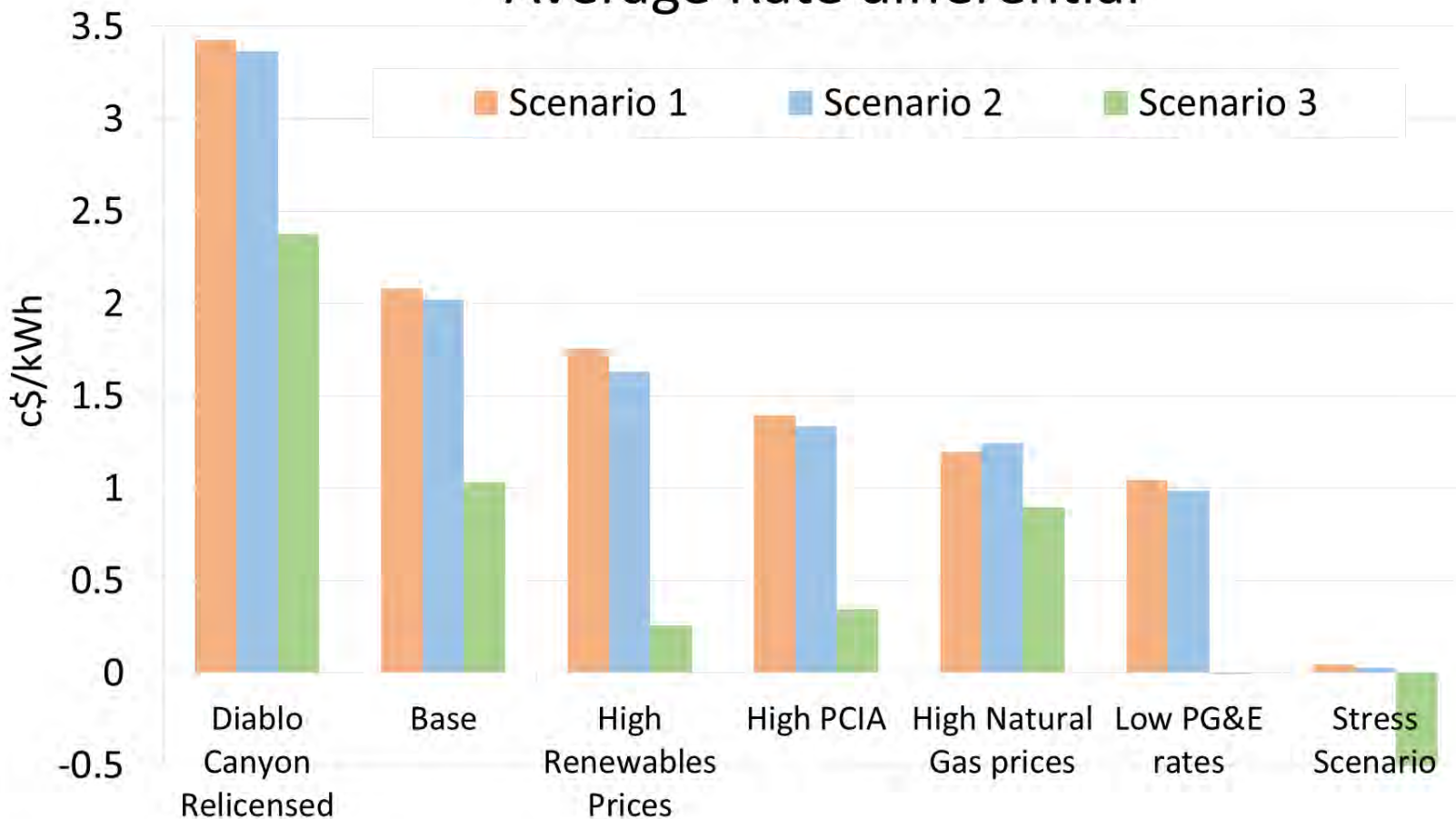
# PRO FORMA SENSITIVITIES

<b>Risk</b>	<b>Description</b>
<b>Diablo Canyon relicensed</b>	+ 25% PG&E generation rates 2024-2030
<b>Low PG&amp;E portfolio costs</b>	- 10% PG&E generation rates 2017-2030
<b>High renewable prices</b>	+ 20 % RPS prices 2017-2030
<b>High PCIA</b>	+ 60% PCIA fee 2017-2030
<b>High natural gas price</b>	+ 60% Natural Gas prices 2017-2030



# SENSITIVITY RESULTS

## Average Rate differential



# RISKS & MITIGATIONS

<b>RISK</b>	<b>MITIGATION</b>
<b>Rate Competitiveness</b>	Rate stabilization fund Communications to CCA customers Good portfolio management (short-medium- and long-term contracts)
<b>Carbon Content</b>	Contract with low-carbon sources for non-RPS resources
<b>Adverse Legislative or Regulatory Actions</b>	Include regulatory and legislative personnel or contractors; work with a CCA regulatory alliance.
<b>Finance/Liquidity Risks</b>	Reserve fund; maintain credit line
<b>Participation (JPA participation and individual opt-outs)</b>	Have commitments from communities before locking in procurement

# CCA-RUN ENERGY EFFICIENCY

## Market Environment

- **Legislative and regulatory initiatives**
  - SB350 – doubles utility goals for energy efficiency by 2020
- **Current EE Delivery Capacity in Alameda County**
  - BayREN – 3 programs applicable to Alameda County in 2015
  - PG&E – 70 EE programs applicable to Alameda County in 2015
- **Existing California CCA DSM Portfolio Activity**
  - Marin Clean Energy is only CCA service as program administrator in 2015

# ENERGY EFFICIENCY FUNDING OPPORTUNITIES

- **Funding models for electric energy efficiency programs**
  - Based on public program purposes charges paid by all customers
  - Program Administrator
    - For CCA customer only
    - For CCA and PG&E customers
  - Non-Administrator

Program Administrator - CCA customer only	\$3,350,000
Program Administrator – CCA and PG&E customers	\$3,941,000
Non-Administrator (PG&E EE Portfolio based on Alameda PPP contributions)	\$26,278,000

- **Other Funding Sources**
  - Gas energy efficiency programs charges
  - Income from CCA Operations

# ENERGY EFFICIENCY MODELING

## Inputs

- Program for CCA customers only
- Development Timeline
  - 3 years fully phase-in CCA
  - 1 year for filing and development of EE programs, launch in 2021
- Energy and Demand Savings Potential
  - Budget assumes public program purpose funds for CCA customers only
- Economic Activity Related to Energy Efficiency

Activity	2021	2022	2023	2024	2025.....	2030
Baseline Budget	\$3.7	\$3.8	\$3.9	\$4.0	\$4.2.....	\$4.7
Customer Out of Pocket	\$9.6	\$9.8	\$10.1	\$10.3	\$10.6.....	\$12.1
Annual Invest Needed	\$13.3	\$13.7	\$14.0	\$14.4	\$14.8.....	\$16.9
Annual incremental savings (GWh)	5.7	5.8	5.9	5.9	6.0.....	6.3
Annual incremental savings (MW)	0.9	0.9	0.9	0.9	0.9.....	1.0

# WHAT ENERGY EFFICIENCY PROGRAMS COULD A CCA DEVELOP?

- **Increase participation rates in existing initiatives**
  - PG&E programs
  - BayREN programs
- **Leverage local government capacity to increase energy efficiency participation**
  - Integrate energy efficiency (and distributed energy) with core City/County planning activities
  - More stringent codes and standards
  - Promote the use of market-ready funding and financing mechanisms, such as enhanced energy infrastructure financing districts and PACE

# MACROECONOMIC ANALYSIS

**Objective:** Identify the changes in Business activity & associated Jobs from a CCA proposal

**Approach:** Capture changes in economy from ....

- *net* Bill savings,
- Spending shifts for capacity, O&M, efficiency, & program admin

Applied a regional calibrated dynamic, forecasting economic model (Regional Economic Modeling Inc.)

# “INCREMENTAL” KEY ASSUMPTIONS FOR JOB GENERATION

- Required investment \$ → *labor vs equipment split*
- Renewable and efficiency purchases embody no in-state manufacturing
- Installation (O&M) expenditures engage *within-region workforce*
- County customer-sited *large* solar in Com'l segment, 100% self-funded
- Efficiency improvements require customer out-of-pocket
- REMI *Construction* sector annual compensation is representative of the market conditions, i.e. a mix of work that is covered (by CBA) & not covered. Approx. a 20:80 split in California.
- FY 2016 CA DIR *prevailing wage* Construction trades 19% higher



# MACROECONOMIC IMPLICATIONS

## Supply Scenario #1 - the BIG picture

CCA Bill Savings (\$million)*				CCA Renewable investment (\$million)		PG&E Foregone Investment (\$million)		CCA Renewable O&M (\$million)		PG&E averted O&M (\$million)		CCA Administration (\$million)			CCA Efficiency Investment (\$million)
Residential	Commercial	Industrial	Government	County	Rest of State	County	Rest of State	County	Rest of State	County	Rest of State	County staff expense	Contract Prof. Services	Contract Data Mngmnt Srvcs	County
				27%	73%	0%	100%	26%	74%	0%	100%				100%
\$737	\$745	\$346	\$162	\$2,299		-\$1,946		\$180		-\$153		\$51	\$57	\$166	\$164
\$1,991				<i>all solar</i>	32% wind; 68% solar		24% wind; 76% solar								

\* 2017-2030, net of PCIA net of customer-sited\* RE/EE investments

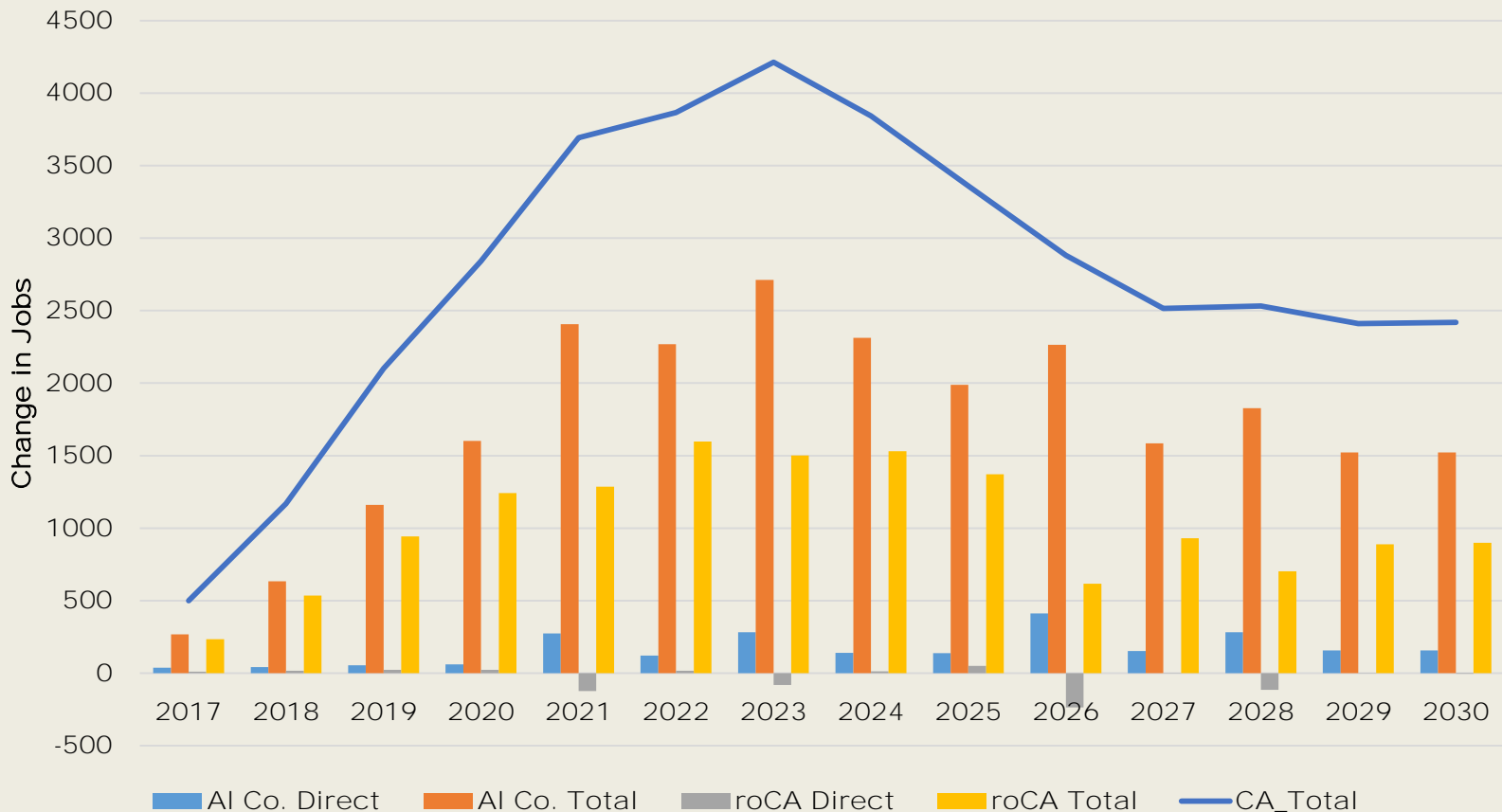
# MACROECONOMIC IMPLICATIONS

## Supply Scenario #1 - Regional Economic Changes (*impacts*)

		<i>Average Annual (2017 to 2030)</i>
Alameda County	Jobs	1,720
	GRP (bil \$ 2015)	\$0.192
<i>Rest of California</i>	Jobs	1,020
	GRP (bil \$ 2015)	\$0.140

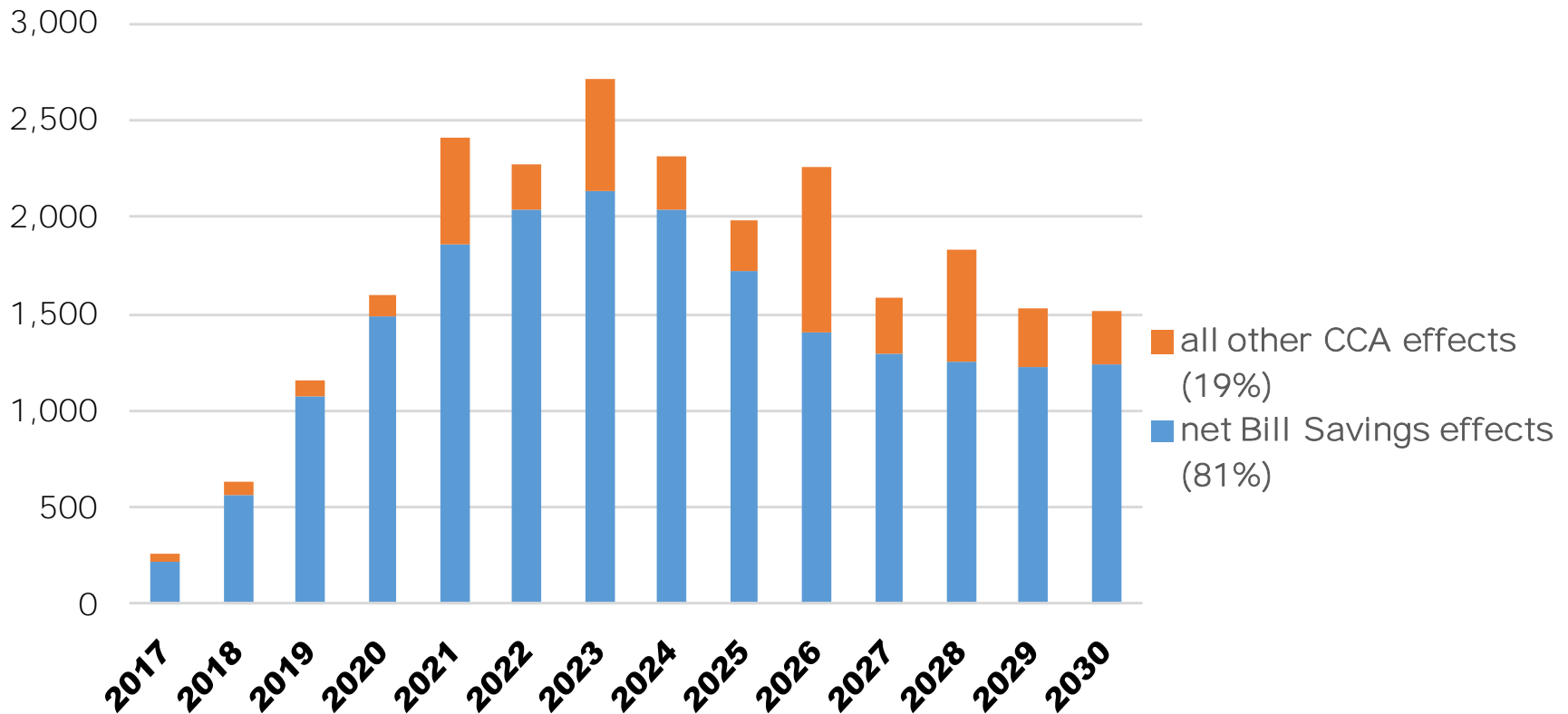
# MACROECONOMIC IMPLICATIONS

## Job Impacts: Direct & Total



# MACROECONOMIC IMPLICATIONS

Alameda Co. CCA Scenario 1 Total Jobs Impacts by Source



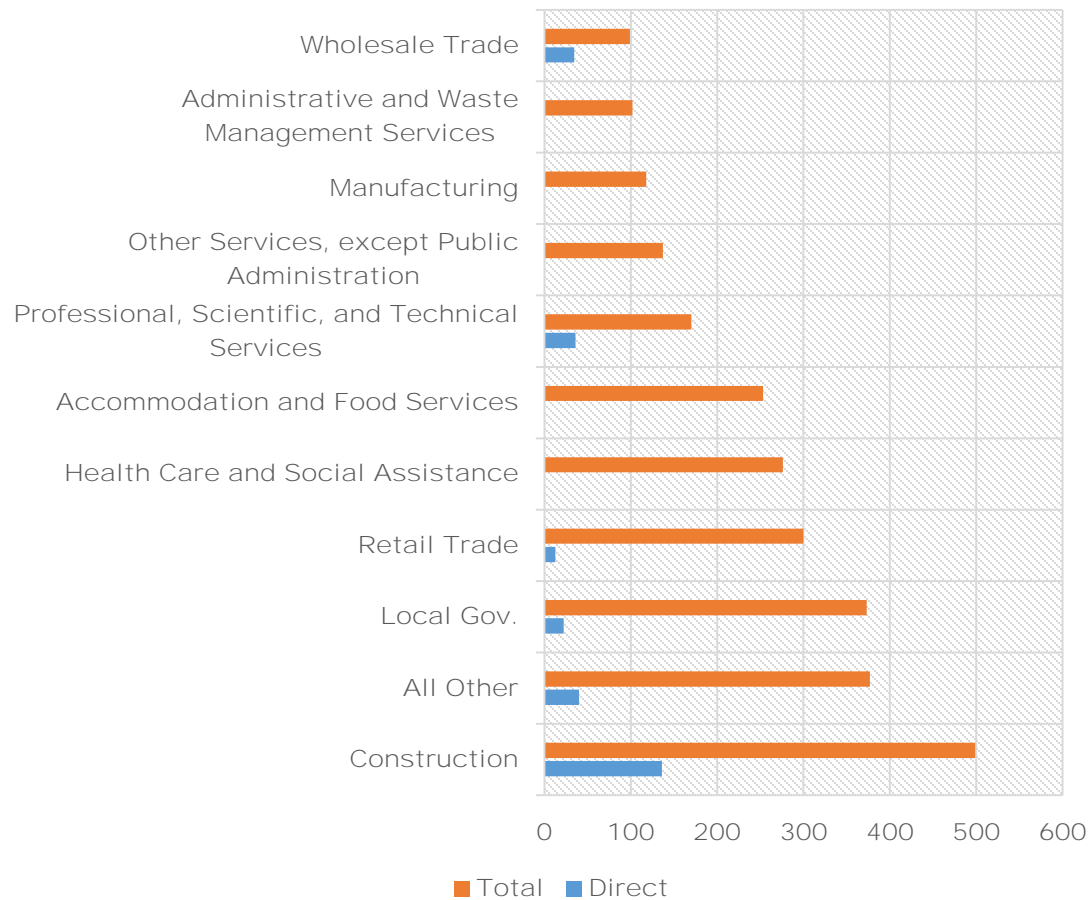
# MACROECONOMIC IMPLICATIONS

## Impacts for County's Construction Sector...

<b>Alameda County</b>	<b>Avg. Annual</b>
Scenario <b>Direct</b> Jobs	143
<i>as Construction</i>	<b>80</b>
UNION (covered)	16
non-UNION	64
Scenario <b>Total</b> Jobs	1720
<i>as Construction</i>	<b>282</b>
UNION (covered)	56
non-UNION	226

# MACROECONOMIC IMPLICATIONS

## 2023 Job Impacts for Top 11 Sectors



# CONCLUSIONS (SO FAR)

- An Alameda County CCA will likely to be able to meet or beat PG&E's retail rates.
- Increasing RPS purchases can be cost-effective, but with some risk
- Carbon reduction goals need more than just increased RPS purchasing to be met.
- Legislative/Regulatory risks are the most serious

# NEXT STEPS

- Complete REMI macroeconomic analysis
- Integrate any feedback into analysis
- Issue report in Mid-May



# QUESTIONS

