



# CleanPowerSF Power Supply: Planning and Procurement

Power CAC

October 27, 2020

CleanPowerSF

# Agenda

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## 1. CleanPowerSF Integrated Resource Plan

- Recap
- Modeling Results
- Stakeholder Engagement
- Next Steps

## 2. Renewable Energy Procurement

- Procurement Process
- Community Benefits

# **CLEANPOWERSF INTEGRATED RESOURCE PLAN**

# What is an Integrated Resource Plan (IRP)?

- An IRP is an energy planning tool to support achieving policy goals and meeting regulatory requirements.
- State law requires retail sellers of electricity to develop an IRP that evaluates electricity supply and demand and identifies energy resource options that can deliver reliable and cost-effective energy to customers.
- CCA IRPs are reviewed and certified by the California Public Utilities Commission (CPUC), every two years.



# CleanPowerSF IRP Modeling: Four Portfolios

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## 1. CleanPowerSF Goals by 2030

- ✓ 100% renewable by 2030
- ✓ Local resource prioritization



## 2. CleanPowerSF Goals by 2025

- ✓ 100% renewable by 2025
- ✓ Local resource prioritization



## 3. CleanPowerSF Goals and Time Coincidence by 2030

- ✓ 100% renewable by 2030
- ✓ Resource generation meets customer usage in real time
- ✓ Local resource prioritization



## 4. CPUC 46 MMT Case

- ✓ Portfolio that meets the CPUC's assigned emissions benchmark (Required)

# CleanPowerSF IRP Modeling: Sensitivity Analysis

## Increased Electric Vehicle (EV) Adoption

What if 100% of new vehicle registrations in 2030 are EVs?

What if all vehicle trips originating, through, and ending in San Francisco are EVs by 2040?



## Increased Building Decarbonization

What if all new construction is 100% electric?



# CleanPowerSF Portfolio Evaluation



Lead with **Affordable**  
and **Reliable** Service

- Portfolio Cost (\$/MWh)
- Portfolio Reliability
- Resource Diversity



Provide **Cleaner**  
Electricity Alternatives

- Portfolio Emissions
- Renewable Energy Content



Invest in **Local**  
**Renewable Projects**  
and **Local Jobs**

- \$ Invested Locally
- MW Developed Locally
- Job Development Potential

*While Providing for  
Long-Term **Rate and**  
**Financial Stability***

- % Long-term Contracted
- Market Exposure (Net Market Purchases)



# CleanPowerSF Preferred Portfolio

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- The SFPUC adopted the Accelerated Case portfolio as CleanPowerSF’s “preferred portfolio” in its 2020 IRP because it balances program goals the best.
- The Accelerated Case portfolio achieves 100% renewable and greenhouse gas free electricity by 2025, five years sooner than San Francisco’s goal.
- The Accelerated Case is also the lowest cost portfolio analyzed and achieves a comparable amount of local investment.
- CleanPowerSF’s 2020 IRP was submitted to the California Public Utilities Commission (CPUC) on the September 1<sup>st</sup> due date.

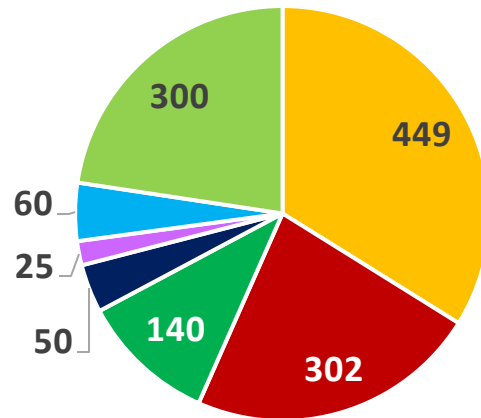


# MODELING RESULTS

# Results: Comparison of Total Portfolio Capacity by Technology (2030)

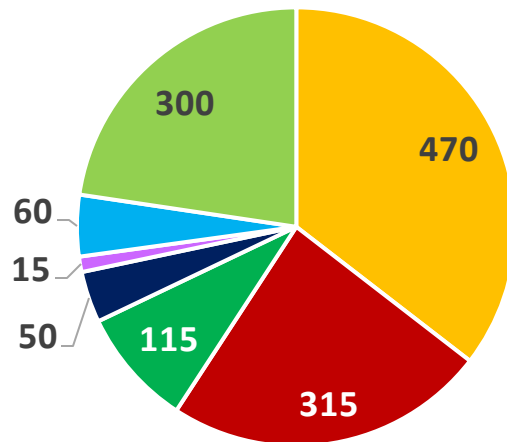
- Solar
- 4-Hour Storage
- Onshore Wind
- Geothermal
- Offshore Wind
- Long Duration Storage
- CA Hydro
- Existing Renewable

**Base Case 2030**  
Total Capacity = 1,327 MW

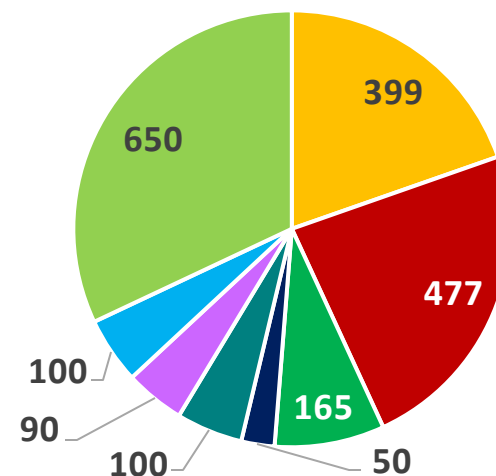


**The Time Coincident Case requires significantly more capacity than other cases to meet time coincident goal.**

**Accelerated Case 2030**  
Total Capacity = 1,325 MW

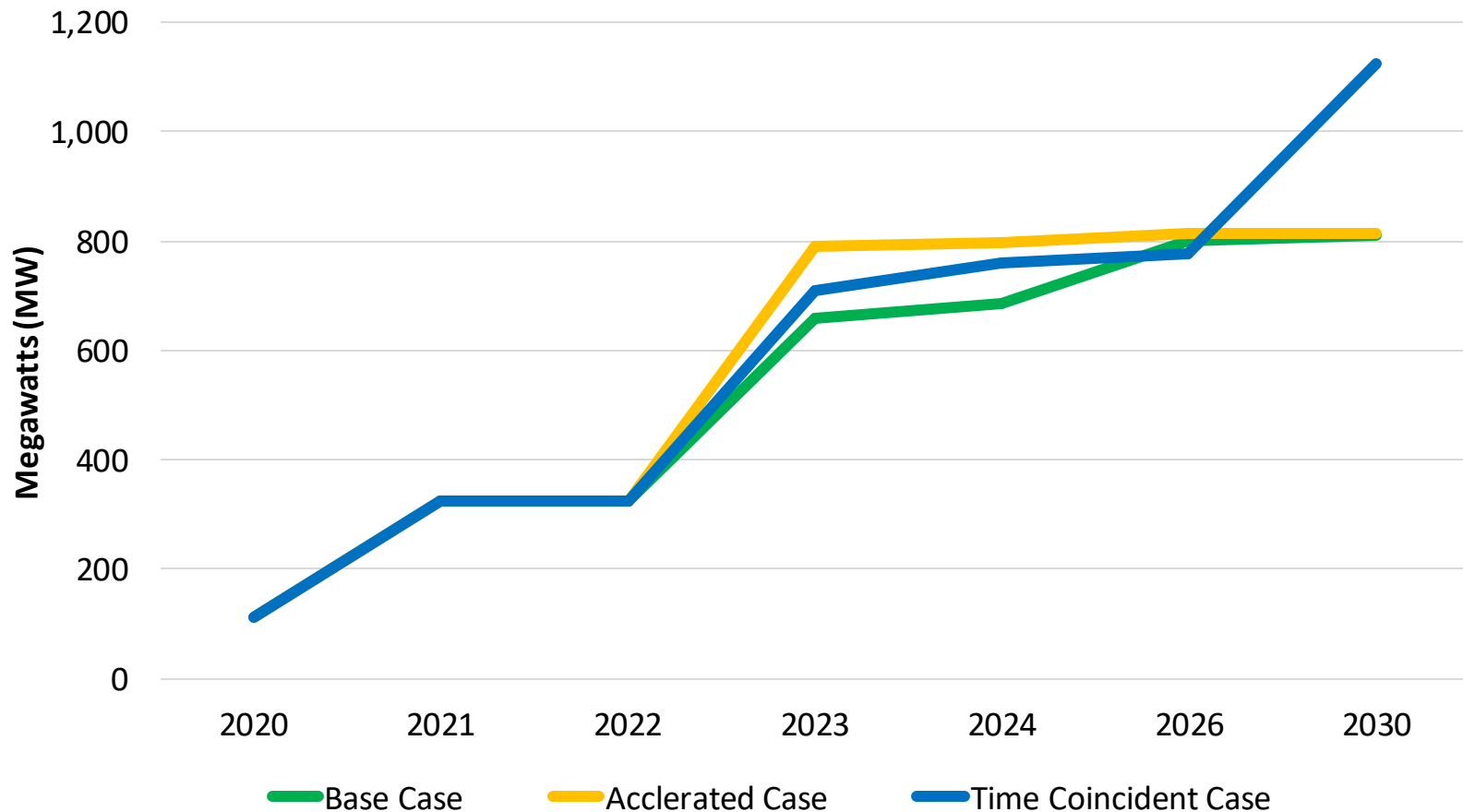


**Time Coincident Case 2030**  
Total Capacity = 2,031 MW



# Results: Comparison of New Resource Capacity Build (MW)

The Accelerated Case (yellow line) adds capacity faster than the other cases; the Time Coincident Case adds more capacity in 2030.

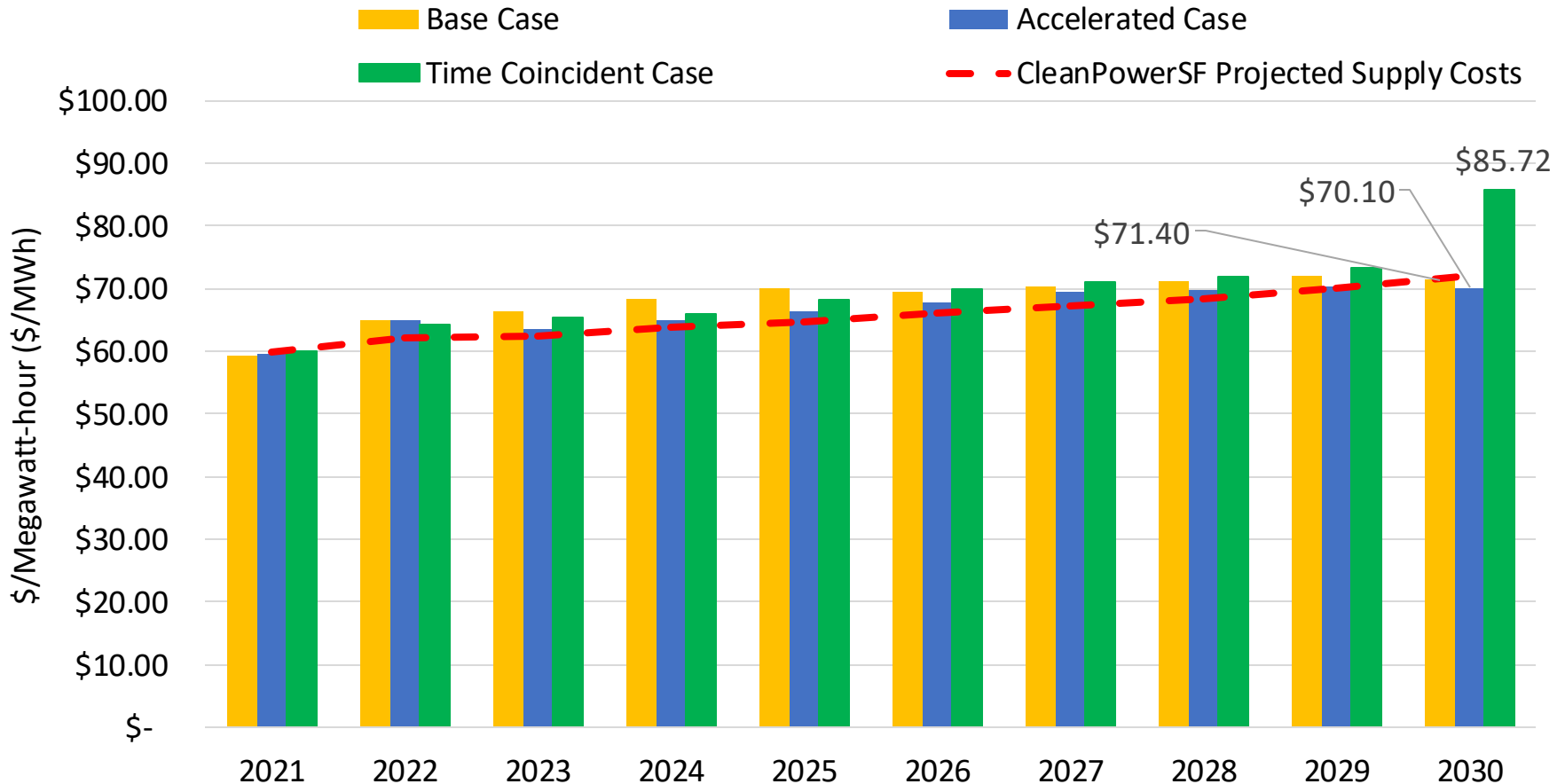


# Results: Local Investment

- All portfolios, including the Accelerated Case, feature 81 MW of local solar and 27 MW of local battery storage
- This represents \$186 million of local investment



# Results: Average Portfolio Costs



Million\$ (2018\$)	Base Case	Accelerated Case	Time Coincident
2030 Portfolio Cost (NPV)	\$ 218	\$ 214	\$ 262
Difference from Base Case (NPV)		\$ (4)	\$ 44
Difference from Base Case (%)		-2%	20%

# Results: Sensitivity Analysis

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- Requiring all new construction to be all-electric is not expected to produce significant additional electricity demand in San Francisco.
  - However, SFPUC will conduct additional analysis to examine the impact of retrofitting existing buildings to go all-electric.
- Meeting the Mayor's EV Roadmap goals is projected to have a significant impact on electricity demand.
  - If CleanPowerSF were to serve all new EV demand, it would represent a 46% increase in annual electricity sales by 2040.
  - Serving this electricity demand would require 114 MW of additional renewable capacity in 2030 and 679 MW in 2040.



# Accelerated Case Portfolio Best Balances CleanPowerSF Program Goals

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## ✓ Affordable

- The Accelerated Case has the lowest total portfolio costs

## ✓ Reliable

- The Accelerated Case meets the annual reliability target

## ✓ Cleaner

- The Accelerated Case achieves City's 100% renewable and GHG-free goals five years sooner

## ✓ Supports Local Investment

- The Accelerated Case includes a comparable amount of local resource development, and given its lower cost provides more financial flexibility for integrating additional local renewable energy projects over time

## ✓ Supports Rate and Financial Stability

- The Accelerated Case provides long-term rate stability without over-building and creating unreasonable market risk

# Public Comment on 2020 IRP Proposal and Future IRP Work



## SHARE YOUR FEEDBACK

We want to hear from you! Input from our customers and the community is valuable to our planning process now and in the future. Energy resource planning is an on-going process, so your feedback will help us focus our efforts as we build on the work we've completed to date.

**We are currently accepting written public comment on staff's recommended preferred portfolio for CleanPowerSF's 2020 IRP submission to the California Public Utilities Commission.**

[SUBMIT COMMENT](#)

Written public comment will be accepted until midnight on August 21, 2020. **All written comments will be made publicly available on [CleanPowerSF.org](https://www.cleanpowersf.org).**



# Stakeholder Engagement and Public Comments

- CleanPowerSF and Power Comms hosted:
  - Community Power Updates
  - Open office hours to answer questions on the IRP
- We received 7 written comments, 5 of which expressed support for the Accelerated Case



# Next Steps

- Additional analysis of local projects identified to prepare for Local Projects RFP
- Prepare for all source RFO for utility-scale resources
- Long-duration energy storage RFO
- Refining sensitivity analysis, focusing on building decarbonization
- Developing customer programs to support local investment and resilience





# For More Information

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Visit our Integrated Resource Plan webpage at:

<https://www.cleanpowersf.org/resourceplan>



# **RENEWABLE ENERGY PROCUREMENT**



# Renewable Energy Solicitations

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- **Past Request for Offers (RFO):**
  - **2017 RFO:** Renewable Energy Supplies (PRO.0077)
  - **2019 RFO:** Local Renewable Energy Supplies (PRO.0153)
- **Current Request for Offers:**
  - Joint CCAs Long-Duration Storage solicitation (Issued Oct. 15<sup>th</sup>)
- **Upcoming Request for Offers:**
  - All source solicitation (Target issuance: Q4 2020)
  - Local renewable energy projects solicitation (Target issuance: Q1 2021)

# Overview of Products Requested

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- Sought bids for energy, environmental attributes, and capacity from renewable energy projects that met the following criteria:
  - New or Existing Eligible Renewable Energy Resources (ERRs), certified by the California Energy Commission; considered the following alternatives:
    - Projects offering Energy Only or Resource Adequacy capacity attributes.
    - Projects with the addition of co-located storage.
  - Delivery of energy into California (CAISO) to the NP15 trading hub or the project node.
  - Terms up to 25 years.

# Overview of Products Requested

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- Preference given to projects that met the following criteria:
  - Project Location: Preference was given to bids featuring energy from projects located within California and within the nine (9) Bay Area Counties, equivalent to 10% of bid score.
  - Project Labor Agreement: For New ERRs, preference was given to projects that planned to execute a Project Labor Agreement (“PLA”).

# Minimum Requirements

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- **Firm Experience:**
  - New Renewable Resources: At least 5 years experience developing 50 MW within the past 10 years.
  - Existing Renewable Resources: At least 5 years experience operating in CAISO.
- **Financial Viability:**
  - New Renewable Resources: Evidence of adequate liquidity to complete project development in the amount of at least \$3 million.
  - Existing Renewable Resources: Demonstrated financial viability by providing access to latest financial statements (most recent 2 years plus a recent quarterly financial statement).





# Evaluation Criteria

The SFPUC evaluated bids to establish a balanced, viable portfolio of supply for the CleanPowerSF program. Bids were evaluated based on the following criteria:

Criteria	Points New ERRs	Points Existing ERRs
Qualifications and Experience	20	20
Bid Value and Portfolio Fit	55	65
Project Viability	10	N/A
Generating Resource Location	10	10
<i>Optional</i> Community Benefits Proposal	5	5
Total	100	100

# COMMUNITY BENEFITS



# Community Benefits Submittal

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Social Impact Partnership Program  
External Affairs Division  
San Francisco Public Utilities Commission

# Community Benefits in Contracts



- We invite our contractors to adhere to our Community Benefits Policy adopted by SFPUC Commission in 2011 by embedding community benefits criteria into SFPUC Request for Proposals/Offers with anticipated contracts of \$5 million and above.
- Our goal is to partner with contractors who have a strong commitment to community benefits and corporate social responsibility.
- Contractor commitments must be:
  - Consistent with the goals and outcomes of the Community Benefits Policy.
  - Firm, quantifiable, and measurable.
- Working together, our goal is to make significant, **positive community impact** in the communities and neighborhoods throughout the Agency's service area.



# Guidelines of the Community Benefits Proposals

What are the guidelines of the Community Benefits Submittal (5% of overall score)?

- Proposers determine:
  - **Community Benefits Work Approach:** Community outcomes they want to achieve and the work plan to achieve them
  - **Community Benefit Commitments:** Distribution of financial, volunteer and in-kind commitments to service providers they want to partner with based on their ability to effectively deliver community outcomes.
  - **Project Team and Organization:** The firm's employees and service partners that will be implementing the work plan
  - **Accountability:** The firm's internal processes to track, report and be accountable
- Firms must make commitments in the communities or neighborhoods where the project work is located.
- Firms make financial, volunteer and in-kind contributions directly to the schools and nonprofits in those communities.
- No contributions can go to the SFPUC, its employees and other city departments.
- *Community Benefit commitments shall be completed within five (5) years of the Agreement execution date or by the end of the Agreement term, whichever is shorter.*

# Positive Community Impacts

THE GEYSERS



COVID-19 Response  
in Blythe, CA



Population served:  
Latinos, female-heads of households, low and very low-income, elderly, homeless, students, incarcerated students



Girls 2000 Climate Change and Health Project since 2017



- Emergency Cash relief
- Rental assistance
- Telehealth services
- Mental health services & therapy
- Food assistance
- Homeless Aid Program

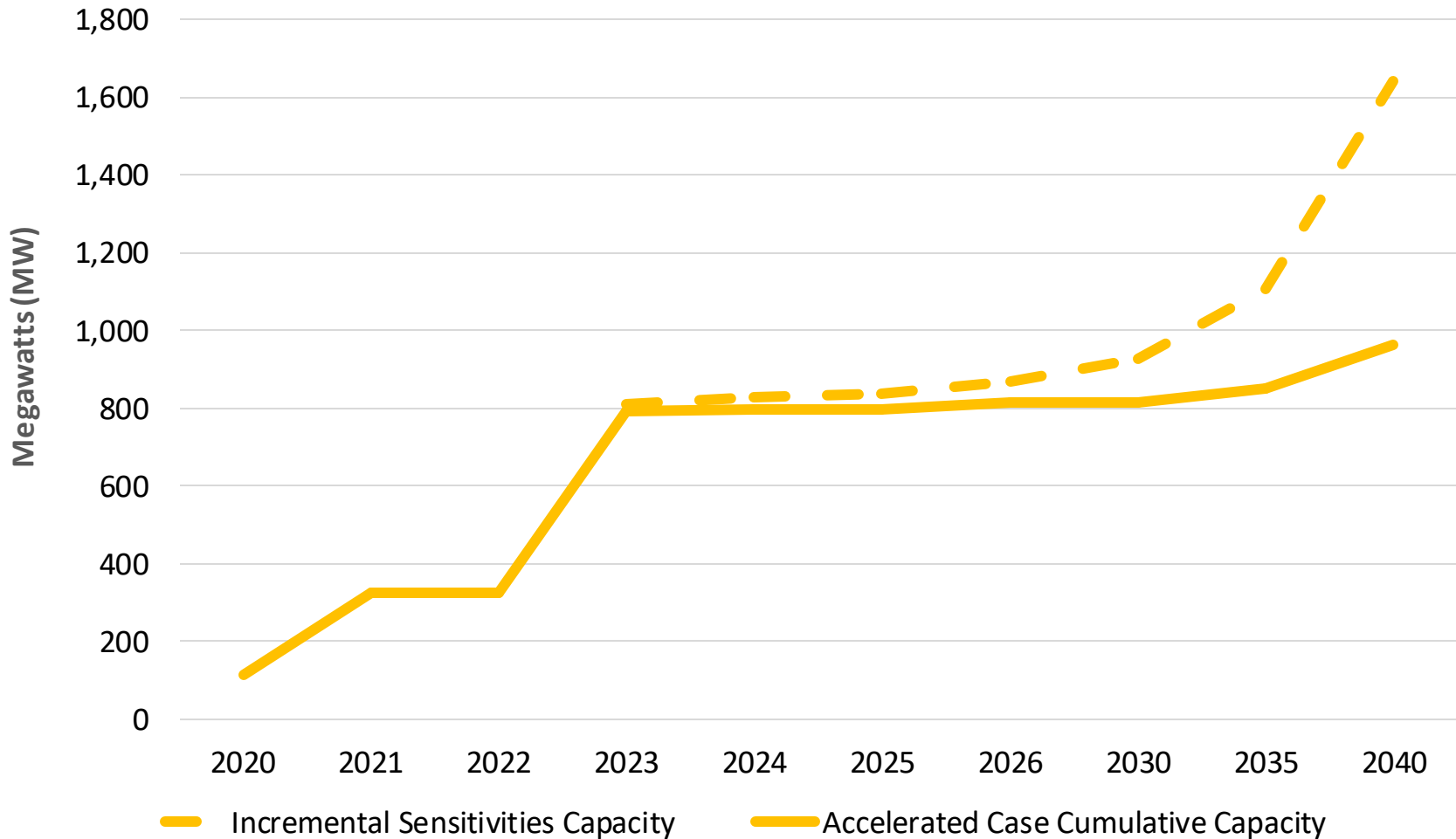
Thank you!

**QUESTIONS?**

**EXTRA**



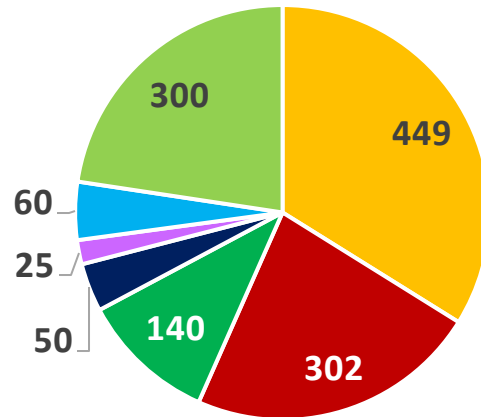
# Results: Electrification Would Require Additional Renewable Capacity



# Results: Comparison of Total Portfolio Capacity by Technology (2030)

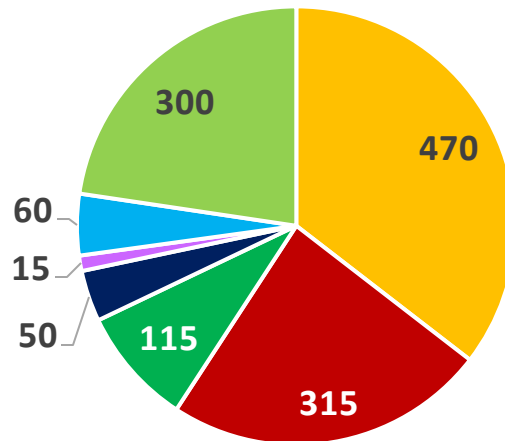
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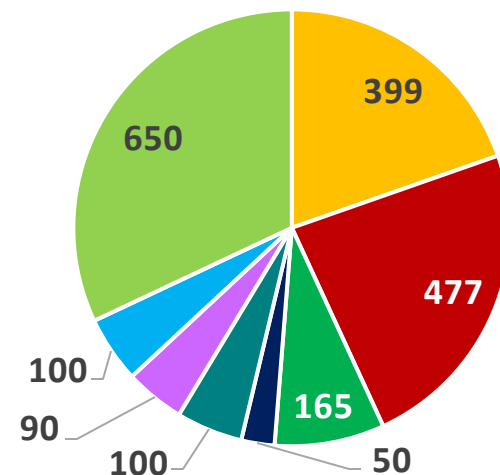


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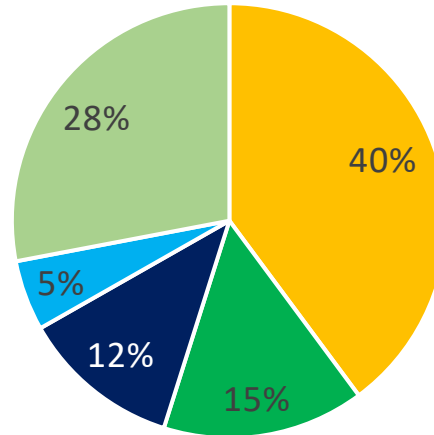
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# Results: Comparison of Total Portfolio Energy Supply by Resource Type (2030)

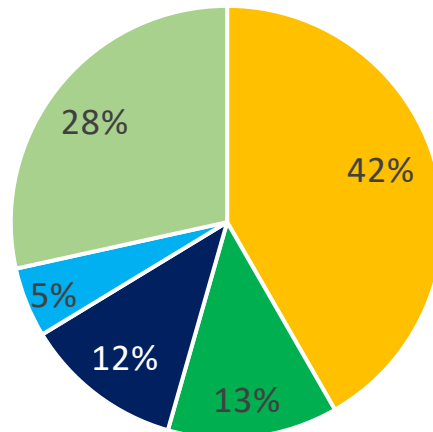
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Base Case 2030

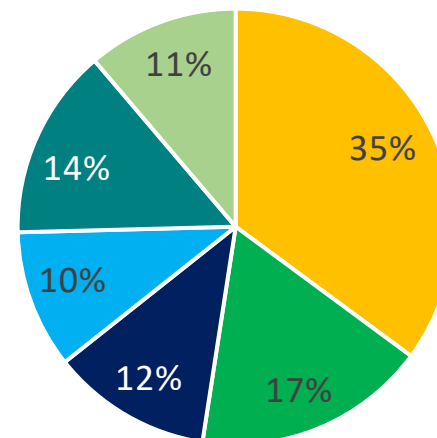


**The portfolios have similar energy mixes. The Time Coincident Case includes more wind, including Offshore Wind and some additional Hydro.**

Accelerated Case 2030



Time Coincident Case 2030

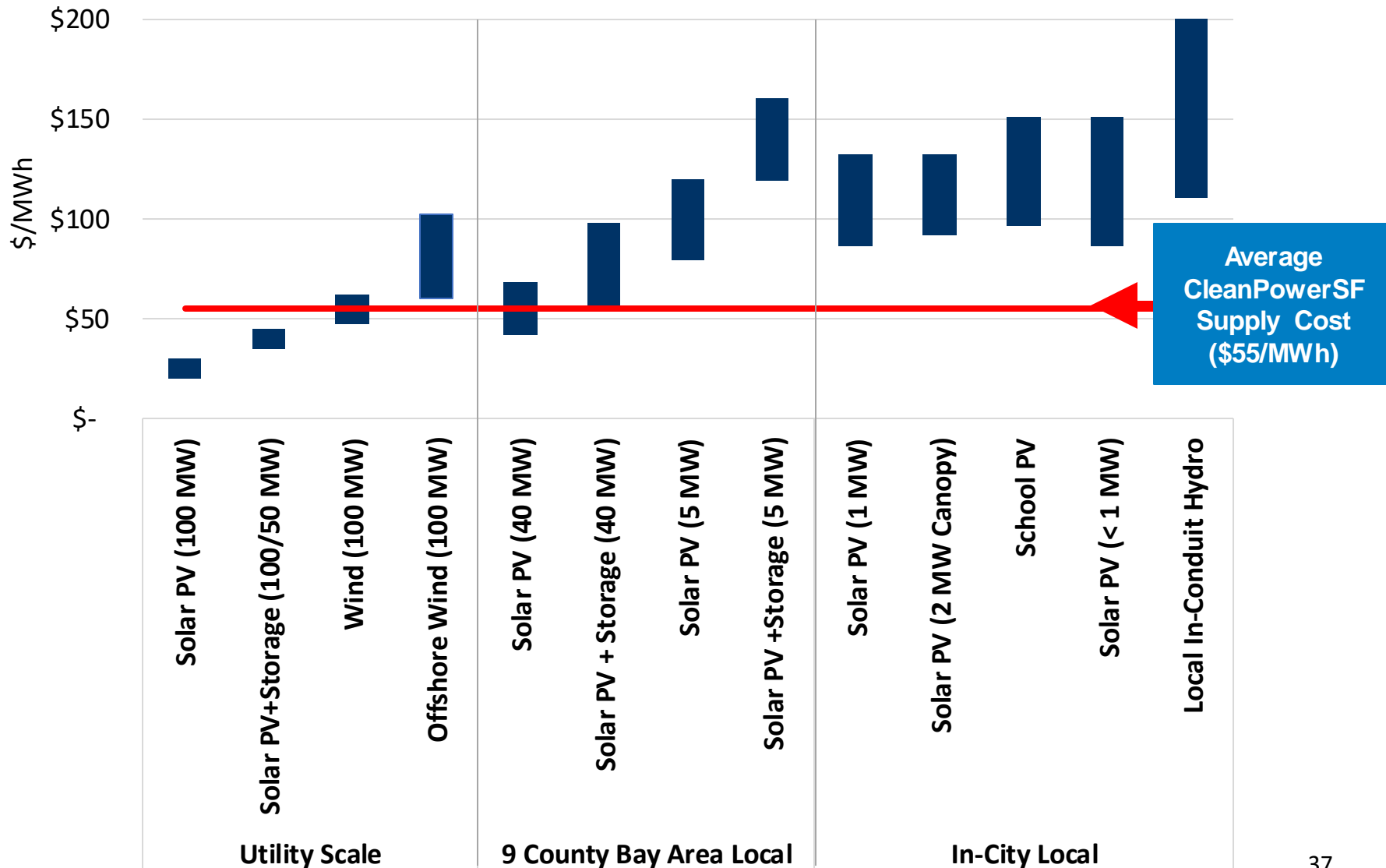




# 38 MMT Preferred Portfolio Ranking (1 = best, 3 = worst)

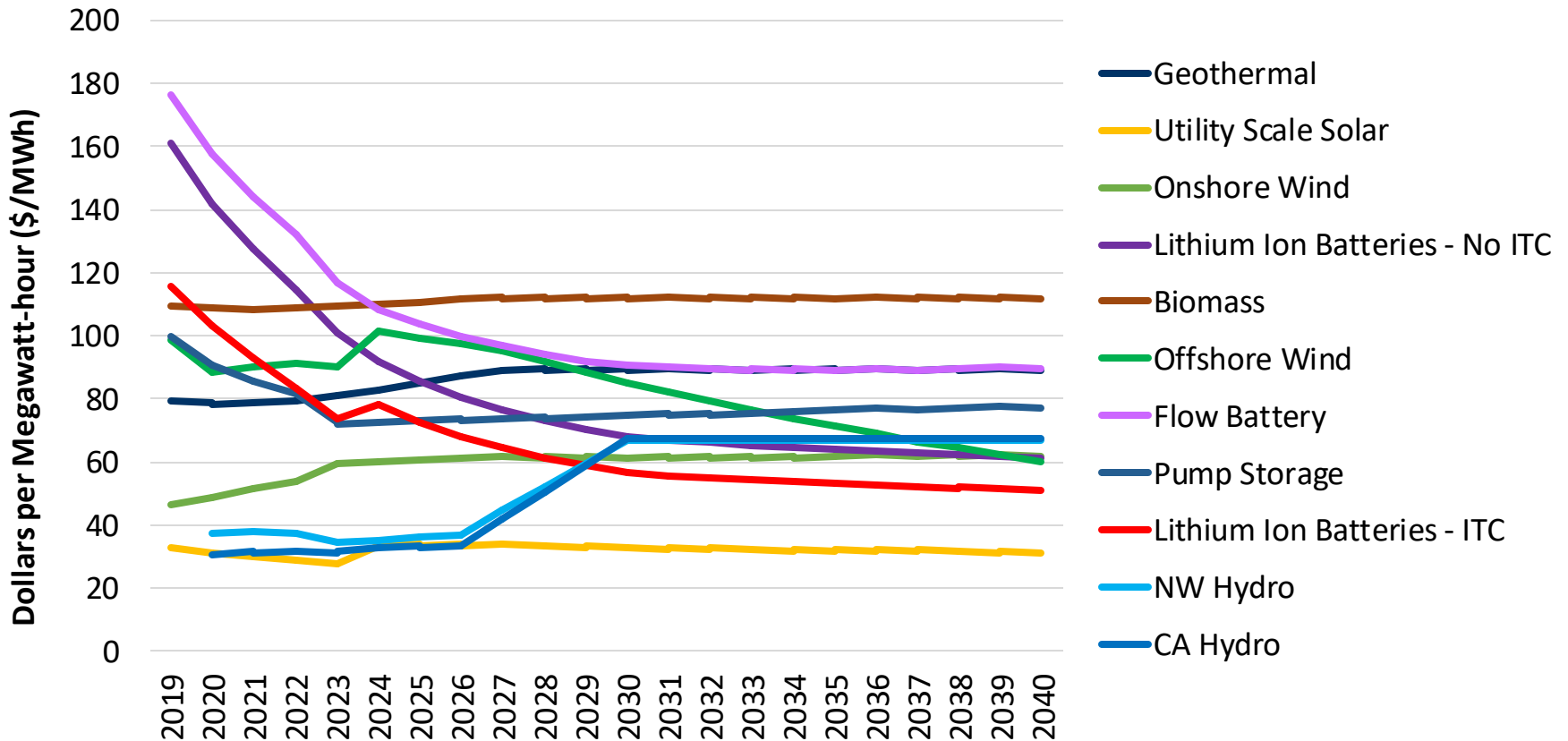
	Base Case	Accelerated Case	Time Coincident Case
<i>Lead with Affordable Service</i>			
Cost	2	1	3
Reliability	2	2	1
Risk	1	2	3
<i>Provide Cleaner Energy Alternatives</i>			
Emissions	Equivalent		
Renewable	Equivalent		
<i>Invest in Local Projects and Jobs</i>			
Local Investment	Equivalent		
<i>Provide for Long-term Rate and Financial Stability</i>			
% Long-term Energy	Equivalent		

# Cost Comparison of Local Renewable Energy Development



# Energy Resource Cost Assumptions

## Levelized Cost of Energy (\$/MWh)



\*Source: CPUC Resolve Model, adjusted by Siemens that includes Capital Cost, Interconnection Cost, Investment Tax Credit, Periodic Replacement and Augmentation



# CleanPowerSF IRP Portfolio Requirements

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- CleanPowerSF required that all portfolios developed in its IRP meet the following additional requirements:
  - ✓ Be Greenhouse Gas Free by 2030
  - ✓ Be at least 70% RPS-eligible renewable by 2030
  - ✓ Meet at least 65% of projected Resource Adequacy obligation with long-term resources
  - ✓ Include 81 MW of local solar and 27 MW of local storage
  - ✓ New renewable resources not already under contract may be developed as soon as 2023 (project lead times)
  - ✓ All new build sited in California
  - ✓ Limit large hydro purchases to CleanPowerSF's proportional share of what CPUC estimates will be available