2024-2025 Transmission Planning Process Reliability Assessment and Study Updates – Day 2

September 23-24, 2024 Stakeholder Meeting

2024-2025 Transmission Planning Process Stakeholder Call – Agenda

Topic	Presenter
Day 1 – September 23	
Overview & Key Issues	Andrew Rivera
IBR Short Circuit Model Update	Jeff Billinton
Reliability Assessment – North	RTN - Engineers
Reliability Assessment - South	RTS - Engineers
Day 2 – September 24	
PTO Proposed Reliability Solutions	SDG&E, PG&E, SCE, VEA
High Voltage TAC Update	Yara Khalaf
Policy Assessment - Update	Meng Zhang
Economic Assessment - Update	Yi Zhang

Transmission Program Impact on High Voltage TAC
Estimating Model – 2023-2024 TPP Version

Yara Khalaf
Senior Regional Transmission Planner

2024-25 Transmission Planning Process Stakeholder Meeting
September 23-24, 2024

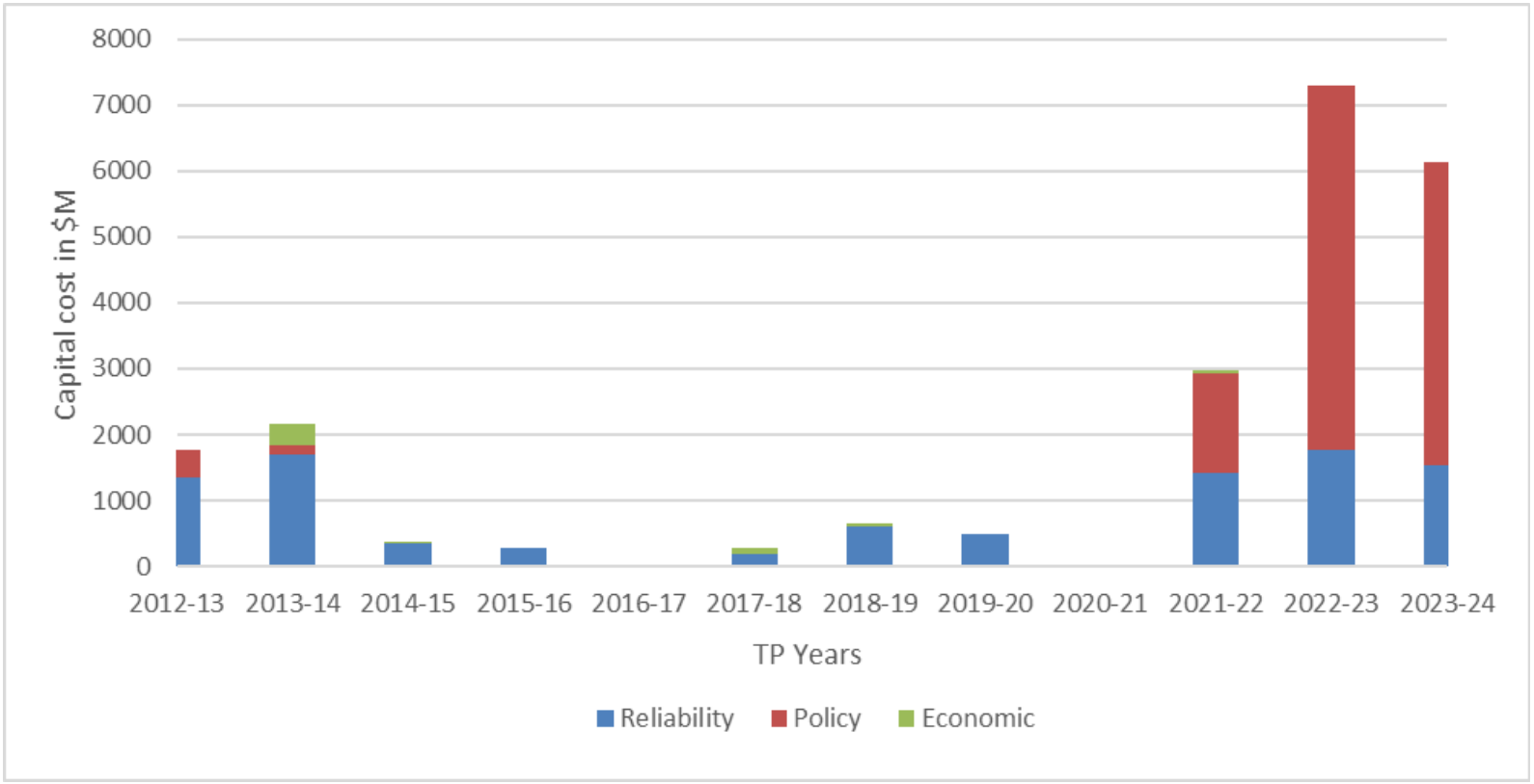
Background

- Forecasting tool developed for the 2012-2013 Transmission Plan in response to concerns over increasing upward pressure on transmission costs.
  - Replacing aging infrastructure
  - Complying with NERC planning standards
  - Meeting California energy policy goals
- Goal is to estimate future high voltage transmission access costs in an objective and transparent manner.
  - Strike a balance of top down estimates with bottom up details
  - Provides transparency to costs related to reliability, policy, and economic driven projects
  - Establish a baseline and allows the flexibility to customize each future project individually
  - Is not a precise forecast of any individual PTO's revenue requirement or any individual project's revenue requirement

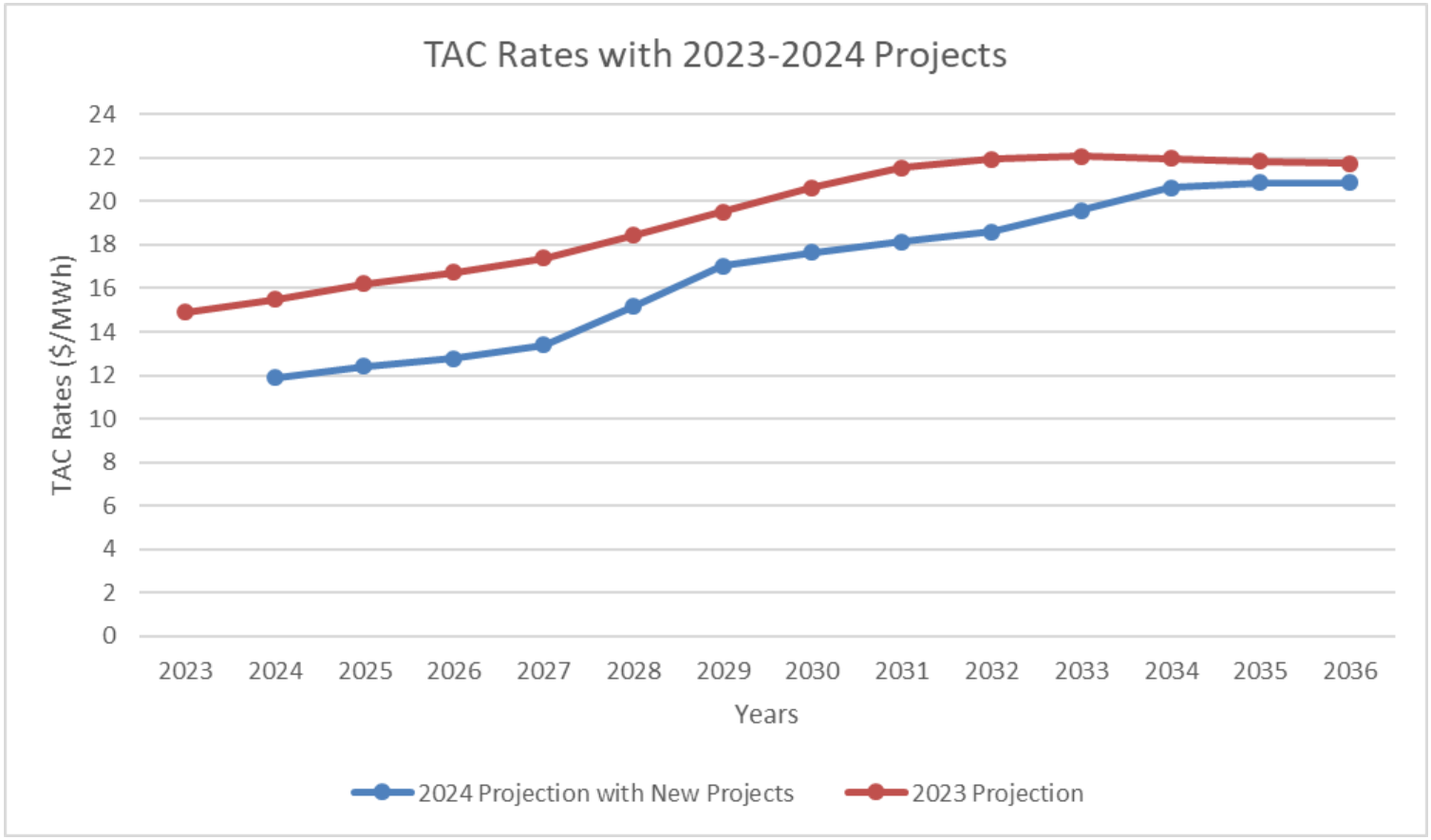
Model and modeling assumptions essentially unchanged from previous years, except for the gross load growth rate:

- O&M costs escalated at 2% per year.
- Non-ISO capital estimated at 2% of gross plant per year
- “Typical” return and depreciation rates applied.
- The 2024 model used the average annual gross load growth of 1.27% based on the CEC demand forecast. 2023 model used 1%.

Comparison of capital projects approved in the 2023-2024 plan and ten previous years:



Regional high voltage transmission access charge projection trended from January 1, 2024 values:



* Existing returns are maintained for existing PTO rate base, and 11% return on equity is assumed for new transmission capital.

Compared to the 2022-2023 model:

- The 2023-2024 projections are lower than 2022-2023 projections which is primarily attributable to:
  - Decrease of $3.58 from last year's projection for January 1, 2024 to this year's actuals reflects the decrease in Transmission Revenue Requirement (TRR) below historical projections.
  - The trend of the 2024 TAC value for the 2024 projection remains relatively consistent with the 2023 projection.
- Together with a higher Gross Load Growth Rate, the lower starting values in this year's model result in lower overall TAC Rates across all years.
- The projection also includes capital projects in 2023-2024 plan and all other transmission plan projects not already energized.

Next Steps

- Continue to refine assumptions and costs based on comments received for use in the 2023-2024 transmission plan
- Provide incremental annual updates as part of the annual transmission planning process
- Please submit your comments through the ISO's commenting tool, using the template provided on the process webpage: https://stakeholdercenter.caiso.com/RecurringStakeholderProcesses

Policy-driven Assessment Updates

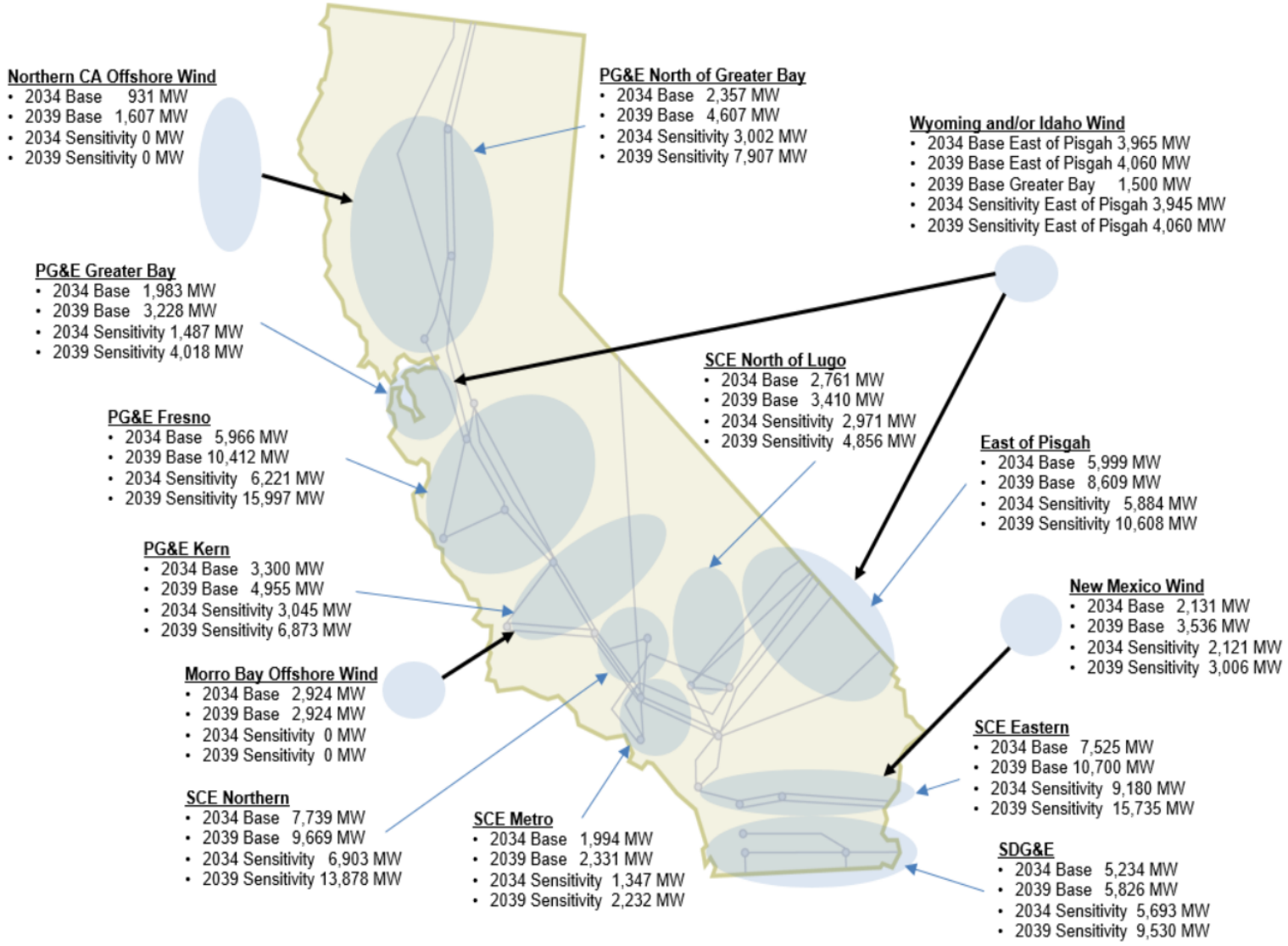
Meng Zhang
Regional Transmission Engineer Lead

2024-2025 Transmission Planning Process Stakeholder Meeting
September 23-24, 2024

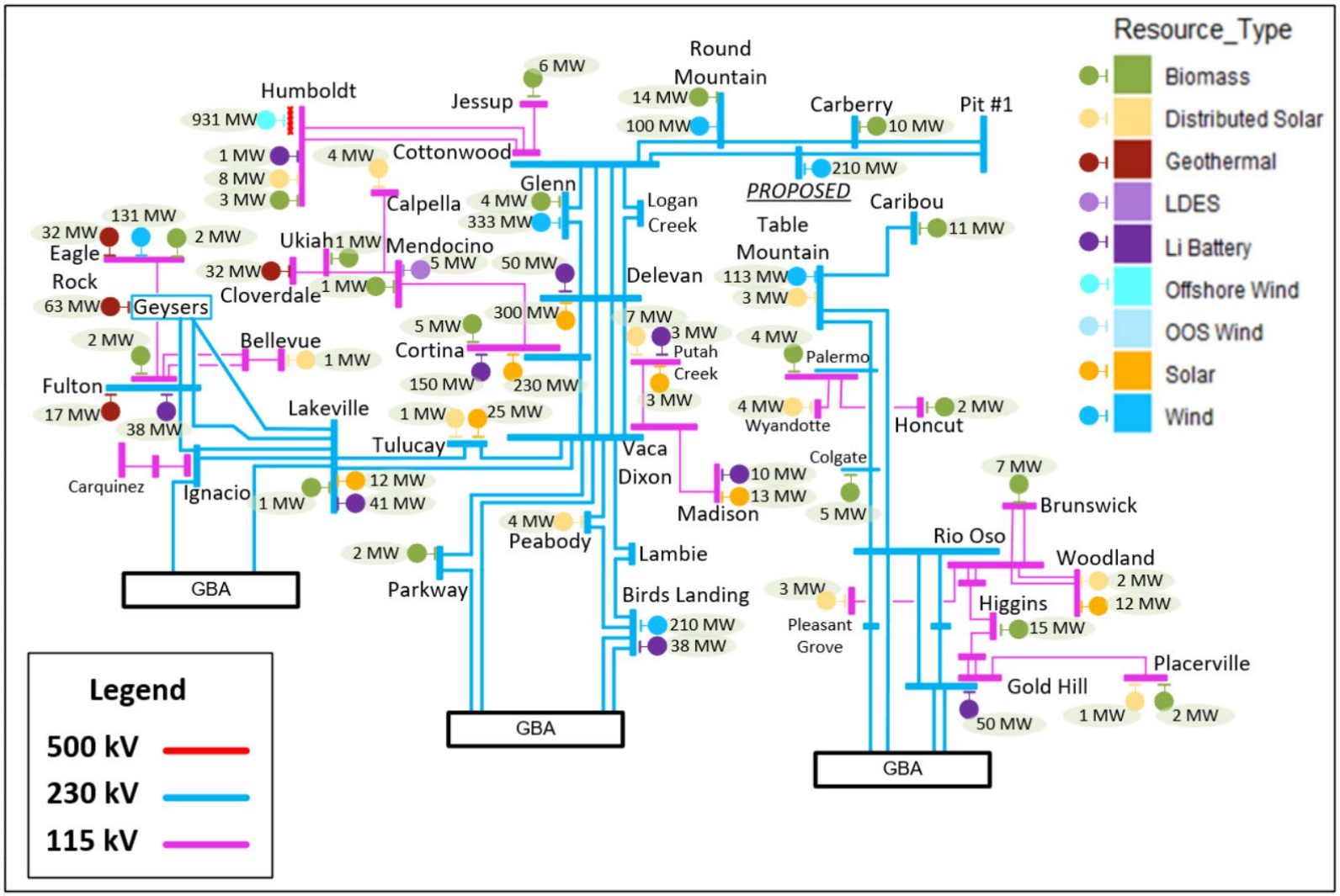
Introduction

- In February, we presented the study plan for the policy-driven assessment including its scope, an overview of the resource portfolios to be studied and the assessment methodology
- In this update, we provide
  - Detailed transmission diagrams for each interconnection area showing portfolio resource locations, amounts and types
  - Non-CPUC jurisdictional approved integrated resource plan to be incorporated into the study
  - Unaccounted for TPD allocation to be included in the study
  - MIC expansion requests being assessed
  - Updated wind and solar on-peak output assumptions
  - Portfolios and scenarios selected for policy study in this TPP cycle

2034 and 2039 portfolio resources by area



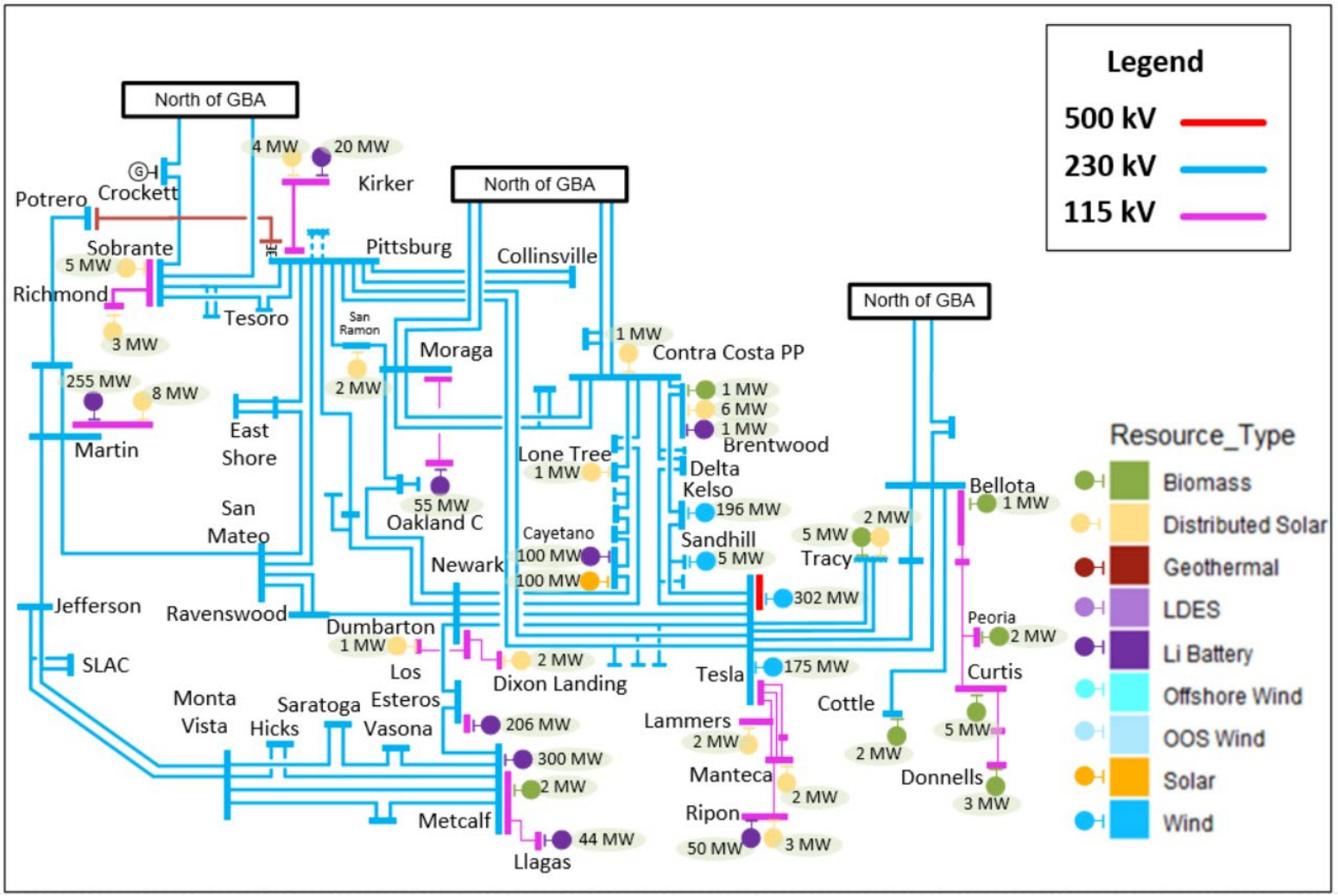
Base Portfolio 2034: North of Greater Bay Area



FCDS
2,647
MW

Total
3,287
MW

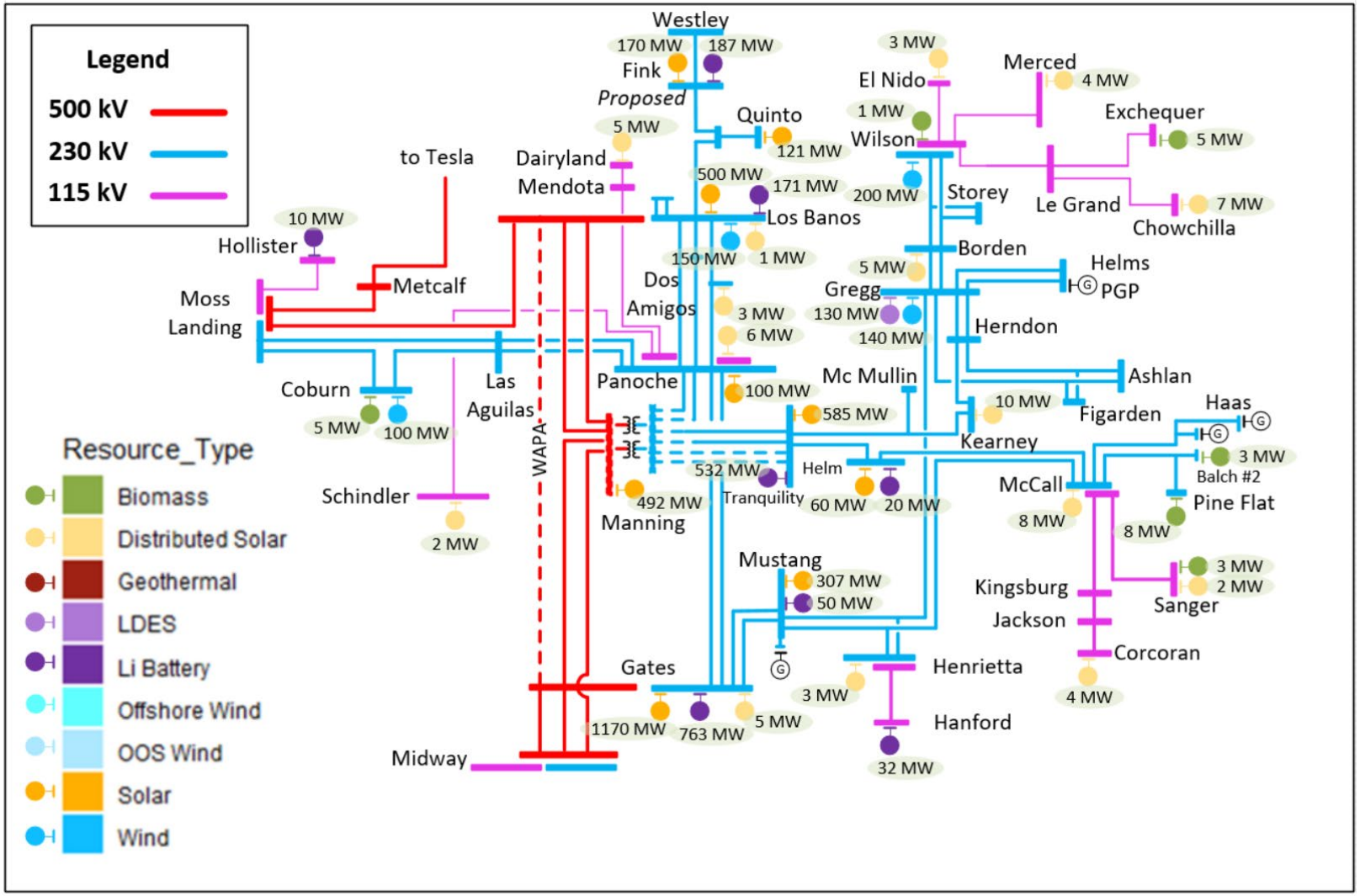
Base Portfolio 2034: Greater Bay Area



FCDS
1,690
MW

Total
1,880
MW

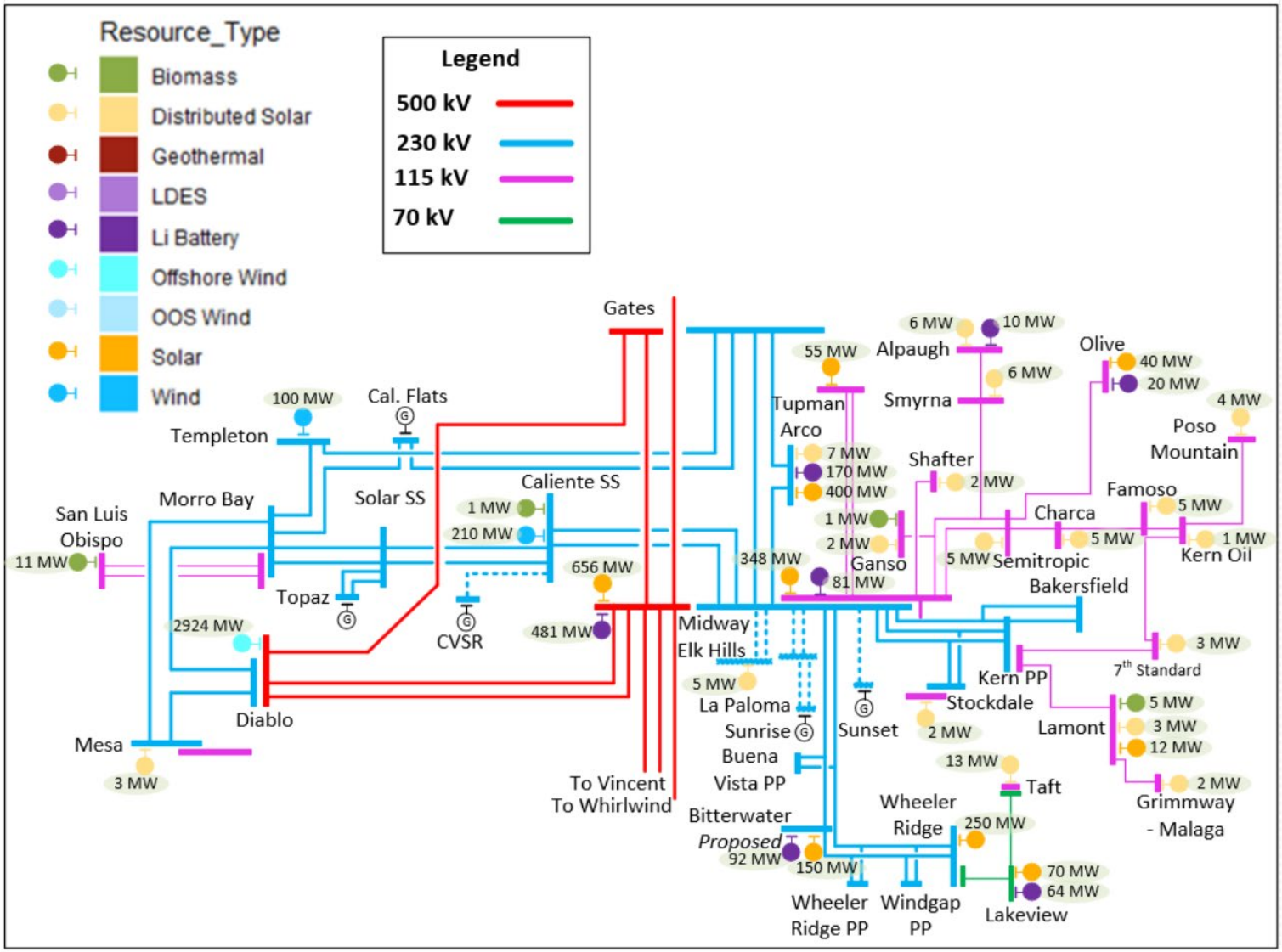
Base Portfolio 2034: PG&E Fresno Area



FCDS
5,116
MW

Total
6,080
MW

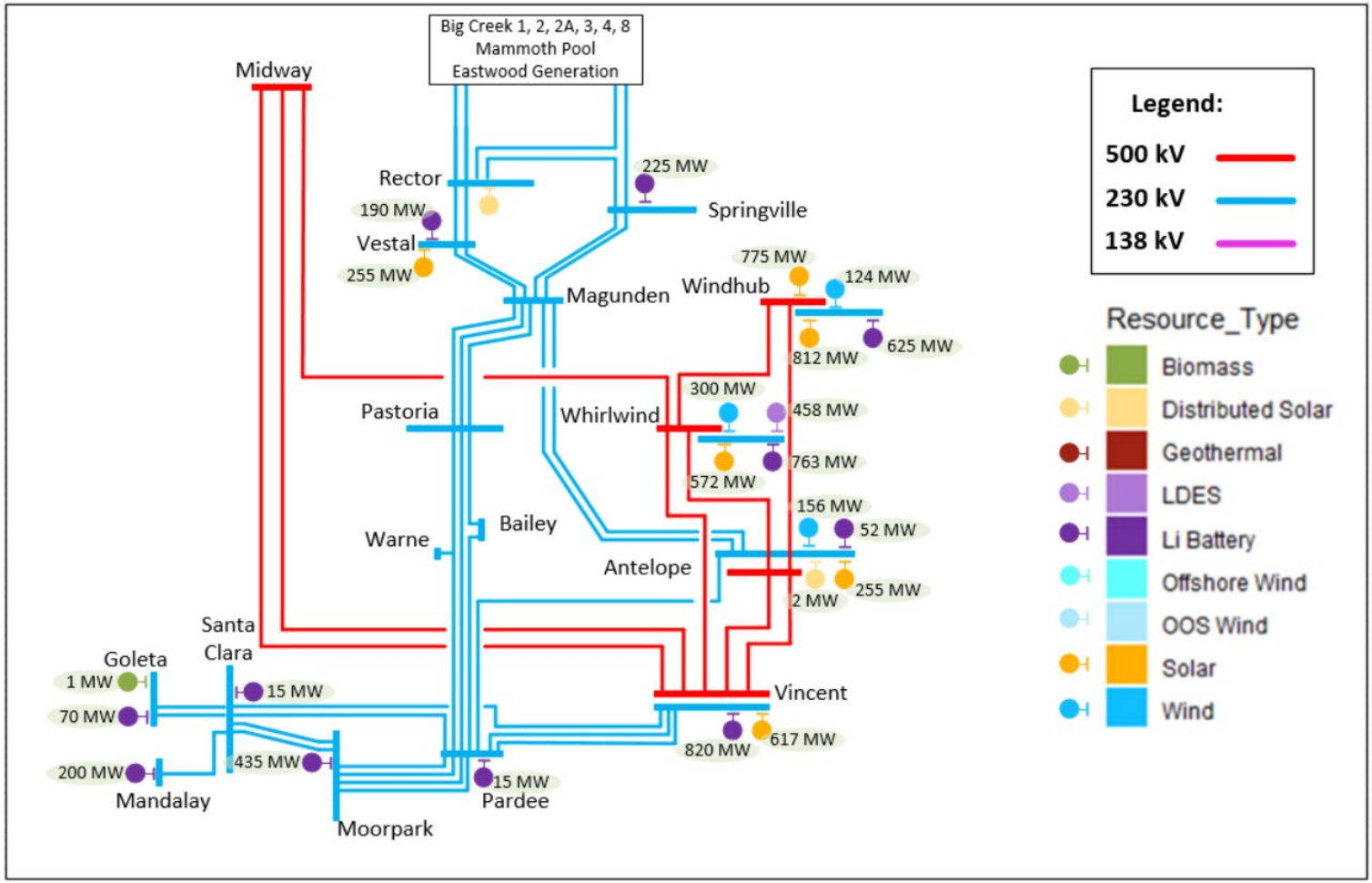
Base Portfolio 2034: PG&E Kern Area



FCDS
4,913
MW

Total
6,224
MW

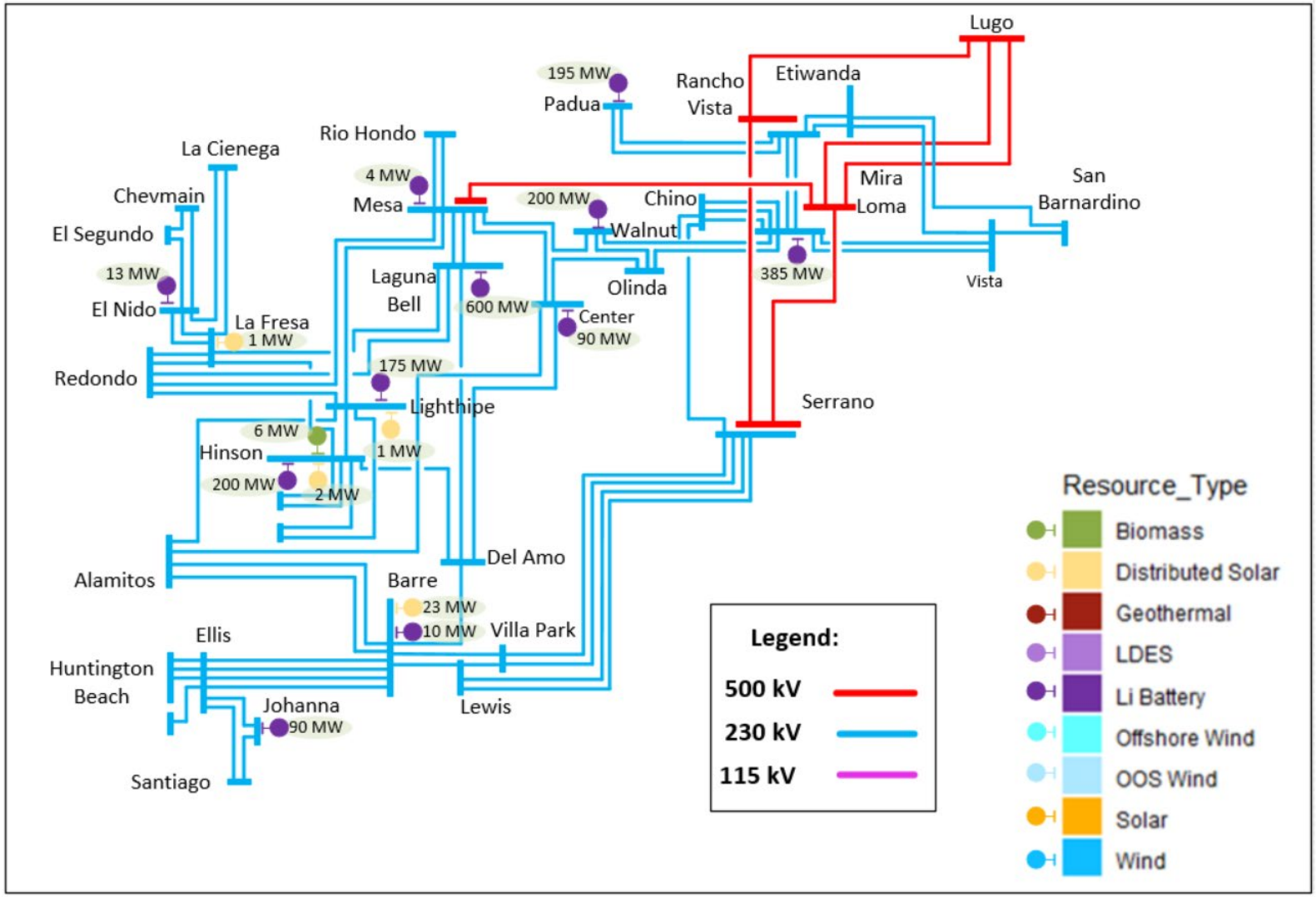
Base Portfolio 2034: SCE Northern Area



FCDS
6,070 MW

Total
7,739 MW

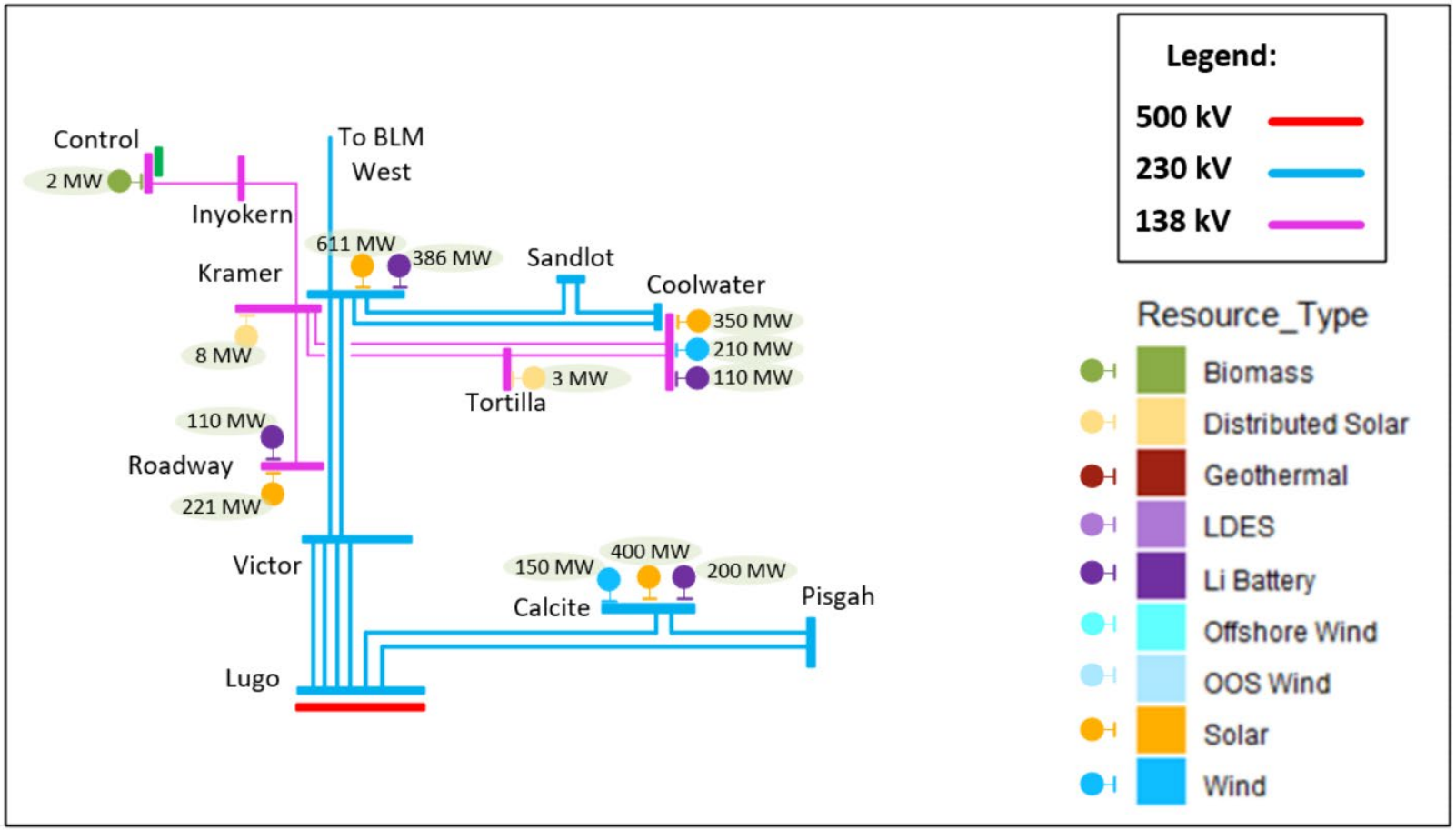
Base Portfolio 2034: SCE Metro Area



FCDS
1,194
MW

Total
1,194
MW

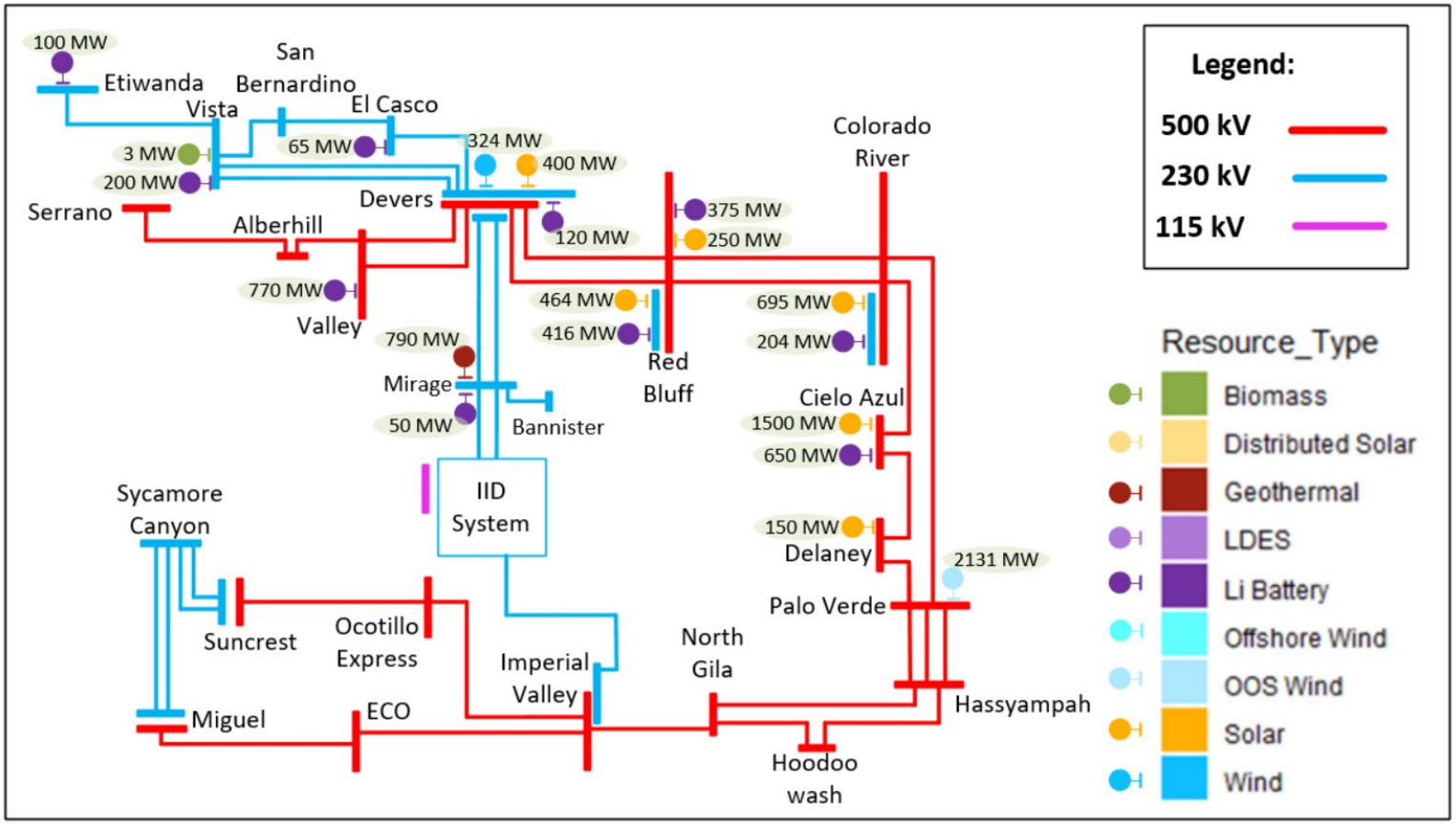
Base Portfolio 2034: SCE North of Lugo Area



FCDS
1,801 MW

Total
2,761 MW

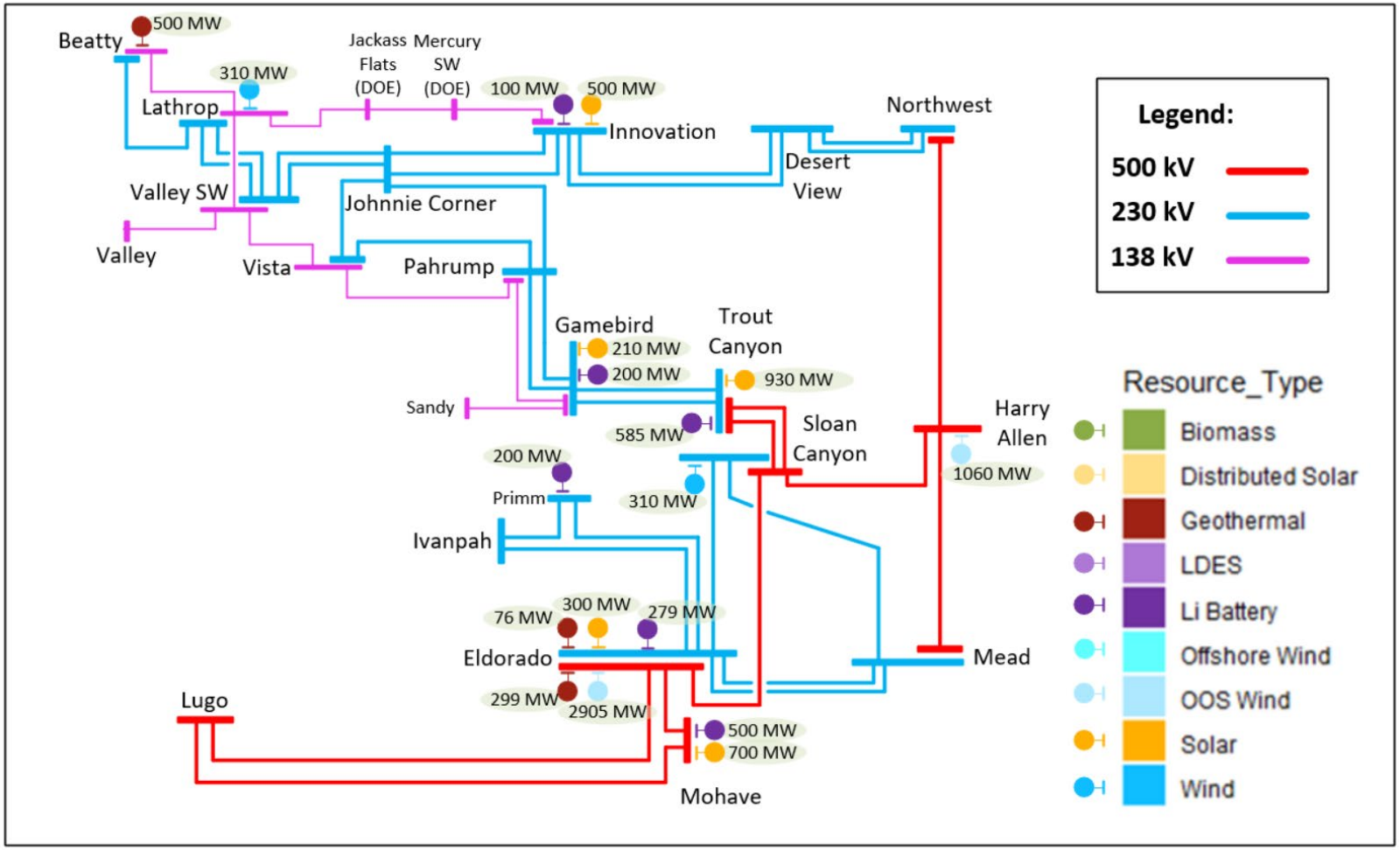
Base Portfolio 2034: SCE Eastern Area



FCDS
6,907
MW

Total
9,656
MW

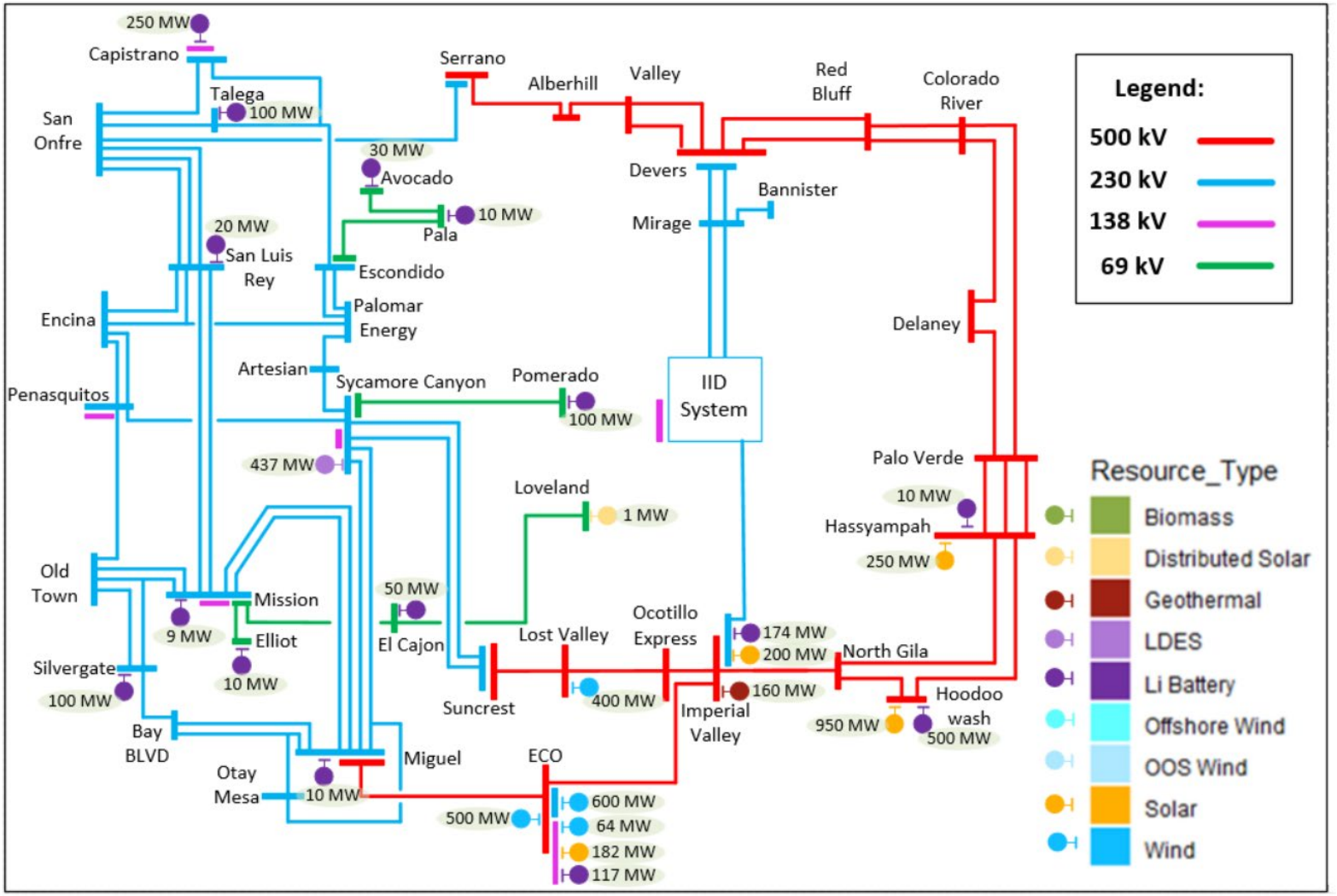
Base Portfolio 2034: East of Pisgah Area



FCDS
8,399
MW

Total
9,964
MW

Base Portfolio 2034: SDG&E Area



FCDS
4,112
MW

Total
5,233
MW

Non-CPUC Jurisdictional Approved Integrated Resource Plans

- Approved IRP submitted by non-CPUC jurisdictional entities will be incorporated in the analysis with the CPUC bus-bar mapped IRP base portfolio
- Future resources identified in the approved IRP from non-CPUC jurisdictional entities including NCPA, Colton, Banning and Six Cities were submitted as comments to the 2024-2025 transmission draft study plan
- Existing resources included in the non-CPUC jurisdictional entities' resource plans appear to have already been included in the TPP study models and as a result will not impact the assessment
- In 2024-2025 TPP policy study one new resource from NCPA will be included based on the details provided by this entity.
- The CAISO will continue to coordinate with the non-CPUC jurisdictional entities in this and future planning cycles on resources that have not been included as baseline or portfolio resources in the CPUC IRP

Unaccounted for TPD Allocation

- CPUC staff identified the following amount of FCDS resources in key MIC regions were previously not accounted for in the portfolios defined in D.24-02-047[1].
- These resources will be modeled in the deliverability assessment to preserve the existing transmission capacity that has been allocated to other projects earlier in the interconnection queue.

			TPD in key MIC regions unaccounted for by mapped resources (MWs)		
CAISO Study Area	**Substation**	**Voltage**	**2034 Base**	**2039 Base**	**2039 Sensitivity**
SCE Eastern Study Area	Alberhill	500	500	500	500
SCE Eastern Study Area	Cielo Azul	500	590	90	499
East of Pisgah Study Area	Eldorado	230	250	-	-
East of Pisgah Study Area	Mohave	500	1,020	1,020	1,240
East of Pisgah Study Area	Trout Canyon	230	1,000	527	975
		Total	**3,360**	**2,137**	**3,214**

1 Final Dashboard for the 24-25 TPP

MIC Expansion Requests Being Assessed

No.	Requestor Name	Intertie Name (Scheduling Point)	MW quantity	Resource type
1-2	Southern California Edison	BLYTHE_ITC (BLYTHE161)	8	Hydro
3-4	Valley Electric Association	MEAD_ITC (MEAD 230)	24	Hydro
5			90	Hybrid (Solar/Battery)
6-7	California Community Power	SUMMIT_ITC (SUMMIT120) * MERCHANT_ITC (ELDORADO230) *	18	Geothermal
		SILVERPK_ITC (SILVERPEAK55) **	13	Geothermal
8-9	San Diego Community Power	IID-SDGE_ITC (IVLY2)	35	Hybrid (Solar/Battery)
		BLYTHE_ITC (BLYTHE161)	160	Hybrid (Solar/Battery)

* = As back-up locations only – main delivery point included as MEAD_ITC (MEAD230) and part of the CPUC portfolio.

** = As back-up locations only – main delivery point included as MONAIPPDC_ITC (MDWP) and part of the CPUC portfolio.

Updated Wind and Solar Output Assumptions

- As communicated in the June 26 stakeholder meeting, the CAISO has updated on-peak wind and solar study factors as shown in the table below. These updated values will be used in this year's policy driven assessment.

Area	HSN				SSN			
	PG&E	SCE	SDGE	VEA	PG&E	SCE	SDGE	VEA
Solar	15%	13%	6%	8%	71%	80%	71%	66%
In-State Wind	50%	48%	35%	48%	19%	17%	10%	17%

Portfolios and Scenarios for Study

- Five cases will be built for study which cover 2034 base portfolio, 2039 base portfolio and 2039 high gas retirement sensitivity portfolio
- On-peak HSN deliverability analysis will be performed for all three portfolios while on-peak SSN and off-peak deliverability analysis will only be performed for 2034 base portfolio

	2034 Base Portfolio	2039 Base Portfolio	2039 High Gas Retirement Sensitivity Portfolio
HSN	X	X	X
SSN	X		
Off-Peak	X		

Current Status and Next Steps

- The CAISO is developing the policy study cases and performing studies
- Preliminary results of the policy-driven assessment will be presented at the November 13 stakeholder meeting

Economic Assessment Assumption Update for 2023-2024 Planning Cycle

Yi Zhang

2024-2025 Transmission Planning Process Stakeholder Meeting
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Key assumptions and inputs for the ISO PCM development in 2024-2025 cycle

- Create three ISO planning PCM cases
  - 2034 CPUC Base portfolio PCM
  - 2039 CPUC Base portfolio PCM
  - 2039 CPUC Sensitivity portfolio PCM
- The ADS 2034 PCM v2.0 is used as a reference PCM case

Development of the PCM cases in this TPP cycle

PCM case	Transmission Model	Load and load modifiers	Renewable, storage, and retirement
2034 Base Portfolio	ISO 2034 base portfolio peak bulk power flow case for reliability and policy studies	CEC 2034 mid-AAEE forecast	CPUC 2034 Base portfolio
2039 Base Portfolio	ISO 2039 base portfolio peak bulk power flow case for reliability and policy studies	CEC 2039 mid-AAEE forecast	CPUC 2039 Base portfolio
2039 Sensitivity Portfolio	ISO 2039 sensitivity portfolio peak bulk power flow case for policy studies	CEC 2039 mid-AAEE forecast	CPUC 2039 Sensitivity portfolio with high gas retirement

Current status and next step

- The CAISO is developing the planning PCM cases
- Will present preliminary results in the November stakeholder meeting

Day 2 - Wrap-up
Reliability Assessment and Study Updates

Yelena Kopylov-Alford
Stakeholder Engagement and Policy Specialist

2024-2025 Transmission Planning Process Stakeholder Meeting
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Request Window Submissions for Reliability Assessment

- Request Window closes October 15
  - Request Window is for alternatives in the reliability assessment
  - Stakeholders requested to submit comments to: requestwindow@caiso.com
  - ISO will post Request Window submission on the market participant portal

Comments

- Comments due by end of day October 8, 2024

- Submit comments through the ISO's commenting tool, using the template provided on the process webpage:
- https://stakeholdercenter.caiso.com/RecurringStakeholderProcesses/2024-2025-Transmission-planning-process

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By Jeff Billinton

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2024 STAKEHOLDER SYMPOSIUM

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at Kimpton Sawyer Hotel, Sacramento, CA

Symposium program - Oct. 30
SAFE Credit Union Convention Center
Sacramento, CA

Visit the event website: www.reg.eventmobi.com/2024stakeholdersymposium

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New Policy Initiatives Timeline

The California ISO has launched the Policy Initiatives Timeline to offer stakeholders a concise overview of ongoing policy initiatives. At a glance, it offers a snapshot view of key details such as the status of each initiative, projected timelines, and the current phase of the stakeholder engagement process. Updates to this timeline will be made weekly and posted on the policy initiatives landing page. For more information, stakeholders are encouraged to reach out to ISOStakeholderAffairs@caiso.com.