

# Lessons Learned – Using Transmission Rights in the CAISO Market

## Regional Issues Forum

November 8, 2022

### Panelists:

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## Agenda

- Existing Transmission Rights Background
- Northern California Power Agency members' ETCs/TORs
- San Francisco Public Utilities Commission's ETCs/TORs
- Lessons learned discussion
- RIF participant questions

## ETC/TOR Definitions and Treatment

- Definitions
- ETCs/TORs receive the highest scheduling and curtailment priority
- ETCs/TORs receive protection from nodal market congestion and transmission costs (“Perfect Hedge”)
- ETCs/TORs may receive protection from nodal market marginal losses costs, consistent with contract terms
- TORs are exempt from some CAISO charges for demand or exports served solely using the TOR (e.g., WAC, neutrality, unaccounted for energy, minimum load)

## Participating Transmission Owners Obligations

- Work with counter party to Existing Contracts to develop Transmission Rights and Transmission Curtailment (TRTC) Instructions – the operational directives submitted to the CAISO to implement the terms and conditions in Existing Contracts

## Transmission Owners that have not turned operational control over to CAISO

- Provide TRTC Instructions to CAISO describing their ownership rights
- May enter into an Operating Agreement with CAISO to further describe responsibilities

## TRTC Instructions provide CAISO with detailed information on Existing Rights and TORs

- Maintain scheduling and curtailment priorities
- Impose, to the extent possible, no additional financial burden on the PTO, Existing Rights holder or TOR holder
- Make as much transmission capacity not otherwise utilized by the Existing Rights holder available as possible for allocation to Market Participants
- Provide the characteristics of the rights:
  - MW, duration, scheduling timeline, curtailment, term of right
  - Point of receipt and delivery
  - Forecasted hourly ETC usage (for CRR allocation purposes only)
  - Whether ETC/TOR provides right to self-provide Ancillary Services

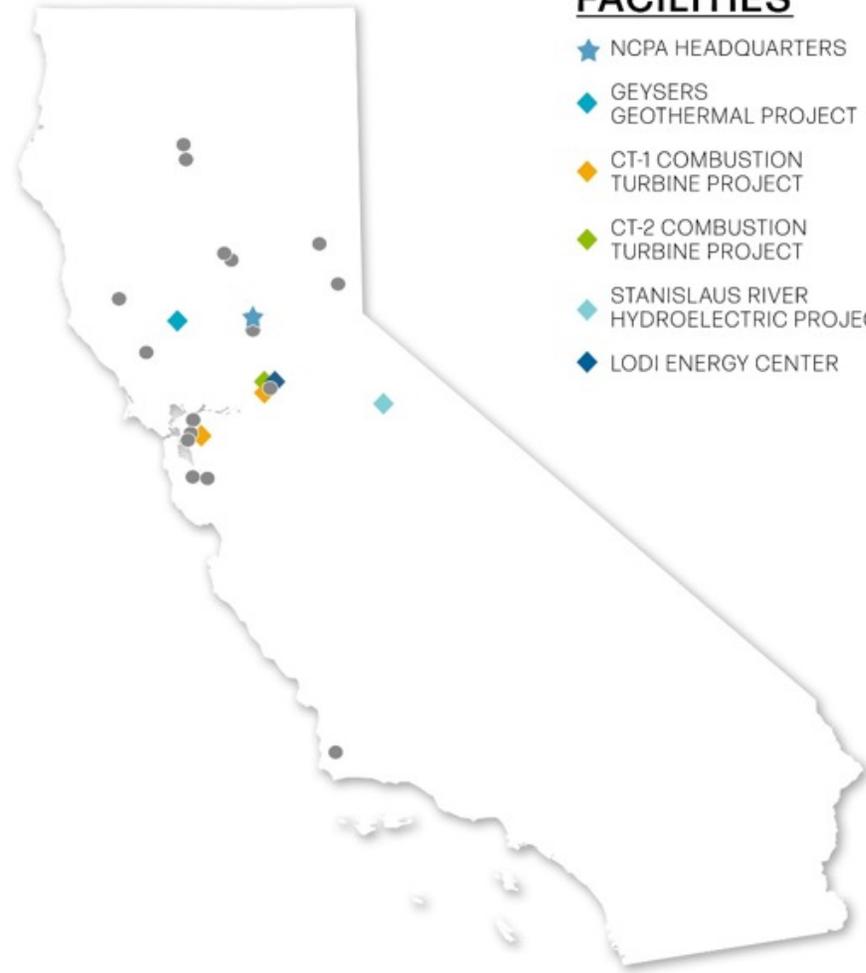
# NCPA Member Resources

## MEMBERS

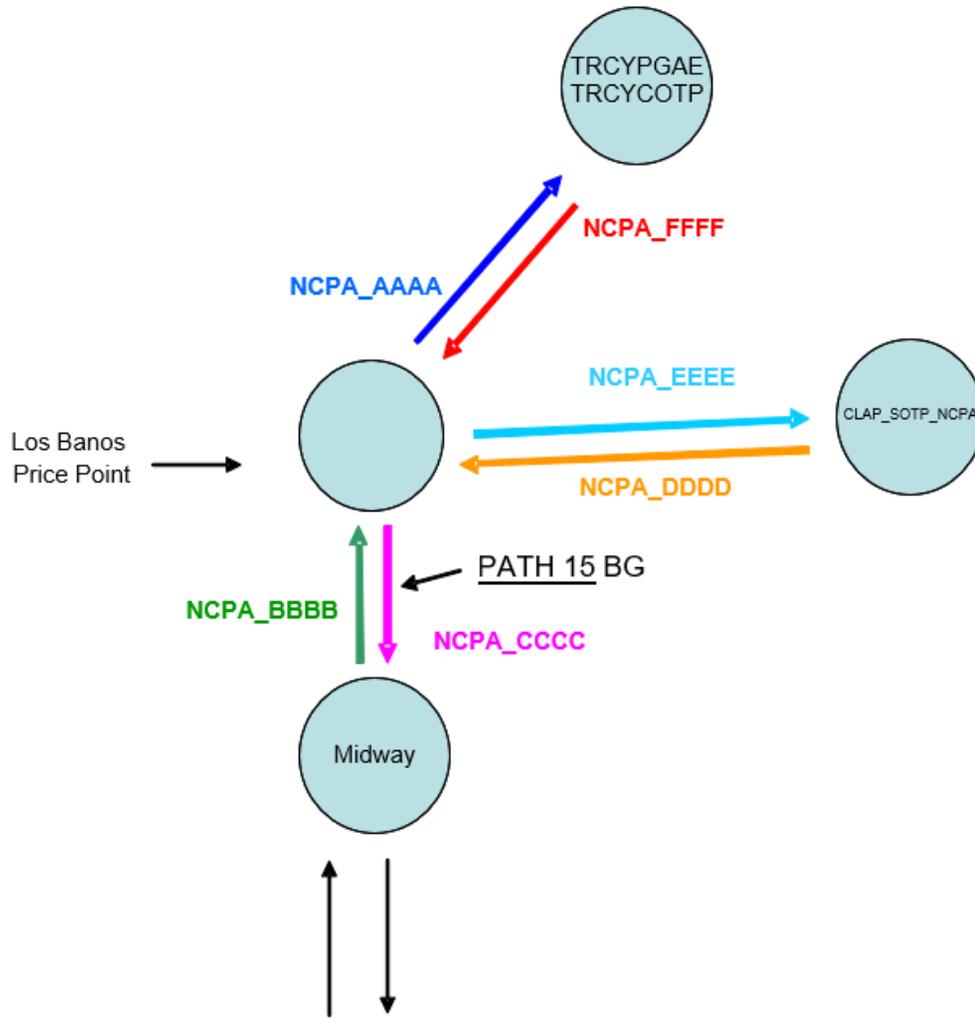
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SAN FRANCISCO BART  
BIGGS  
GRIDLEY  
HEALDSBURG  
LODI  
LOMPOC  
PALO ALTO  
PLUMAS-SIERRA REC  
PORT OF OAKLAND  
REDDING  
ROSEVILLE  
SANTA CLARA  
SHASTA LAKE  
TRUCKEE DONNER PUD  
UKIAH

## FACILITIES

★ NCPA HEADQUARTERS  
◆ GEYSERS GEOTHERMAL PROJECT  
◆ CT-1 COMBUSTION TURBINE PROJECT  
◆ CT-2 COMBUSTION TURBINE PROJECT  
◆ STANISLAUS RIVER HYDROELECTRIC PROJECTS  
◆ LODI ENERGY CENTER

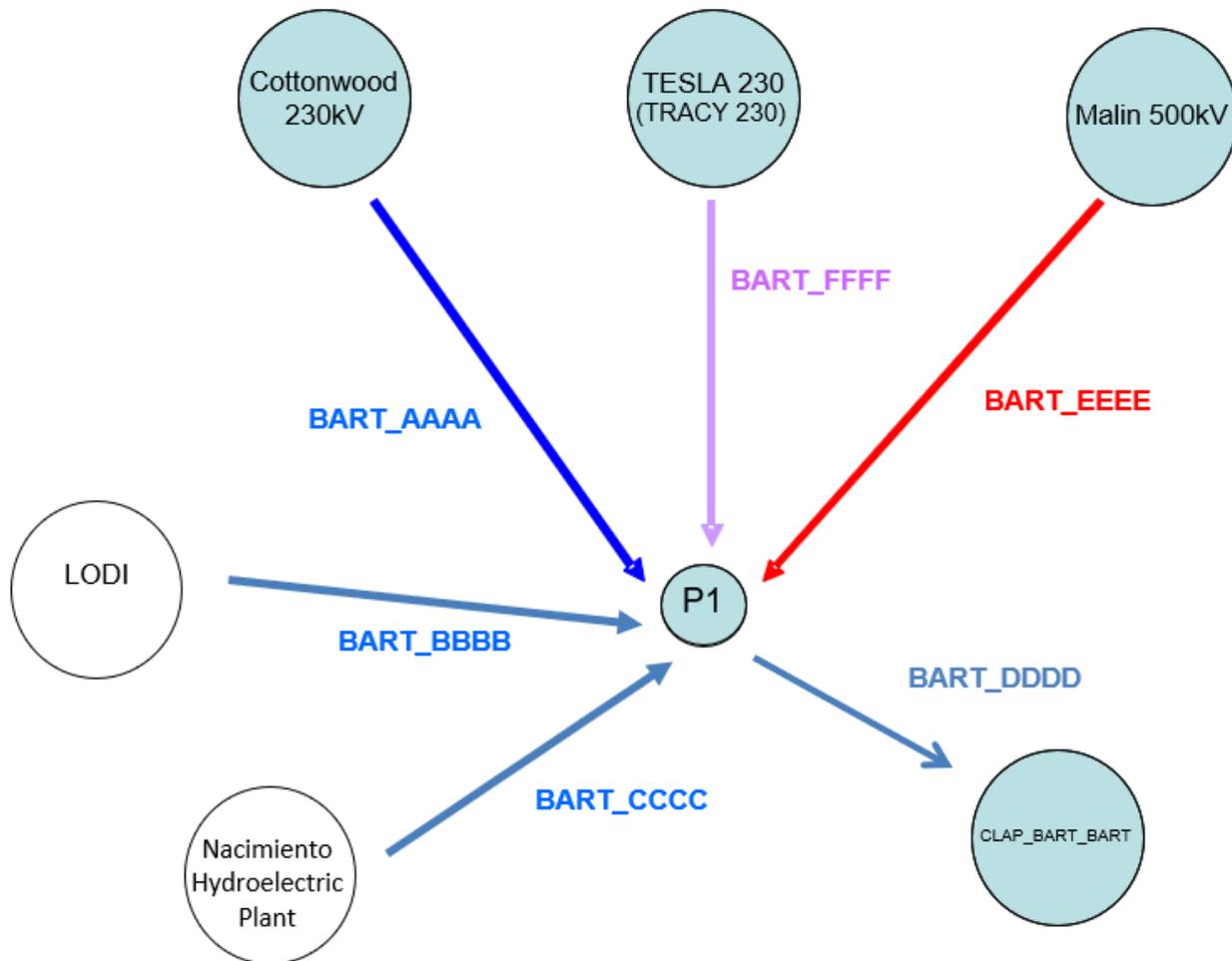


# Illustrative NCPA TRTC Model

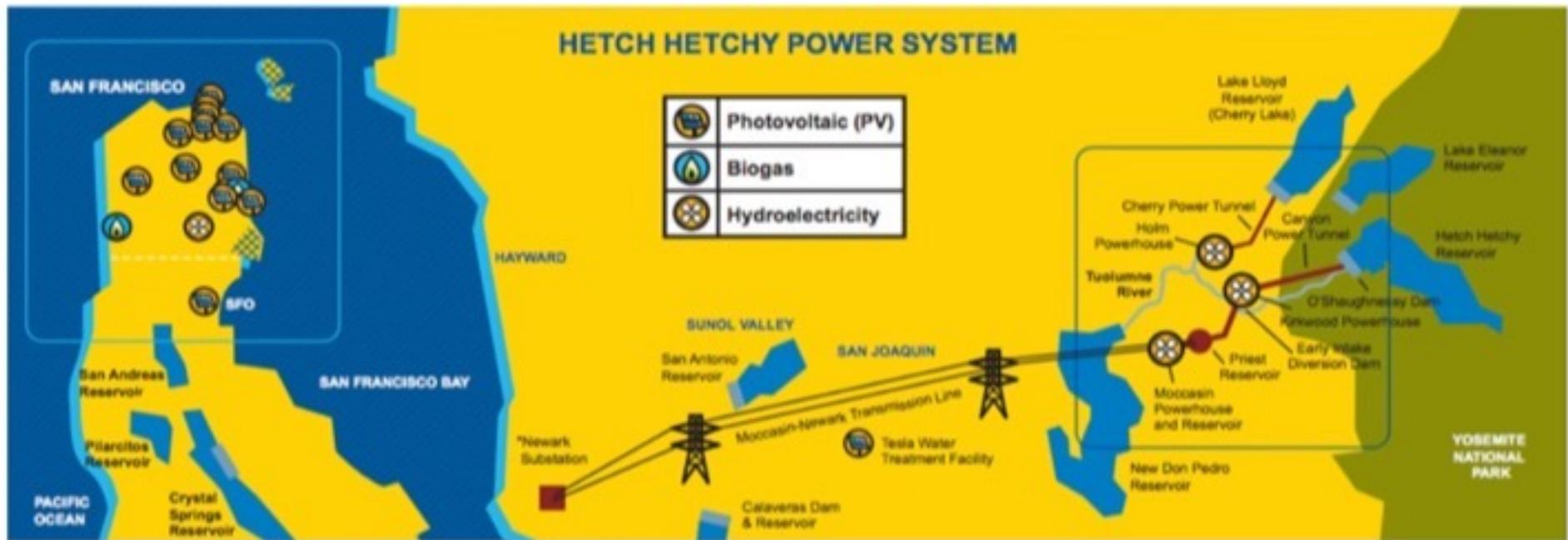


CRN Chain ID	CRN Chain Member CRNID	CRN chain Sequence	SUMMARY	
CRN_CHAIN_ID	CRN_ID	SEQ_NUM	SOURCE	SINK
NCPA_GGGG	NCPA_BBBB	1	MIDWAY	P1
	NCPA_AAAA	2	P1	TRCYPGAE-COTP
NCPA_HHHH	NCPA_BBBB	1	MIDWAY	P1
	NCPA_EEEE	2	P1	CLAP
NCPA_IIII	NCPA_FFFF	1	TRCYPGAE-COTP	P1
	NCPA_CCCC	2	P1	MIDWAY
NCPA_JJJJ	NCPA_DDDD	1	CLAP	P1
	NCPA_CCCC	2	P1	MIDWAY

# Illustrative BART TRTC Model



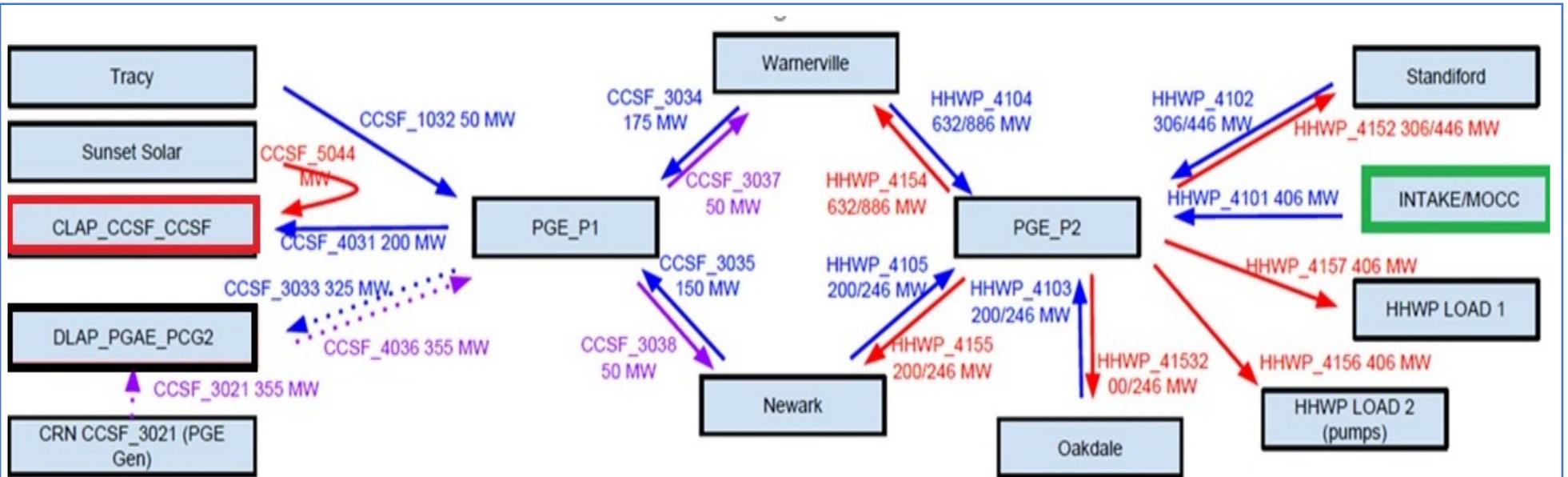
# San Francisco Public Utilities Commission Resources



\*Hetch Hetchy energy enters the electricity grid at the Newark Substation.

The San Francisco Public Utilities Commission is the exclusive power provider on Treasure Island and in the redeveloped Hunter's Point Shipyard.

# Illustrative SFPUC TRTC Model



HHWP power scheduled through feasible transmission paths

HHWP Transmission interconnects with:

- the CAISO controlled grid at Newark and Warnerville
- Modesto Irrigation District (Standiford)
- Turlock Irrigation District (Oakdale)

## Lessons Learned Discussion

## RIF Participant Questions