



**California Public Utilities
Commission**



California Energy Commission



California ISO
Shaping a Renewed Future

Southern California Reliability

Preliminary Plan

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Reality of Southern California's Grid post-San Onofre

Details:

- San Onofre represented 16% of local generation or ~1.4 million homes
- More importantly its location was on a critical transmission path that was crucial to voltage support

Challenge:

- Once through cooling retirement timeline of 5,000 MW
- Annual load growth of 400 MW
- Difficult to move limited energy to load without adequate voltage support

Summary of staff approach

Requirements:

- Maintain reliability – Number 1 priority
- Establish a common understanding

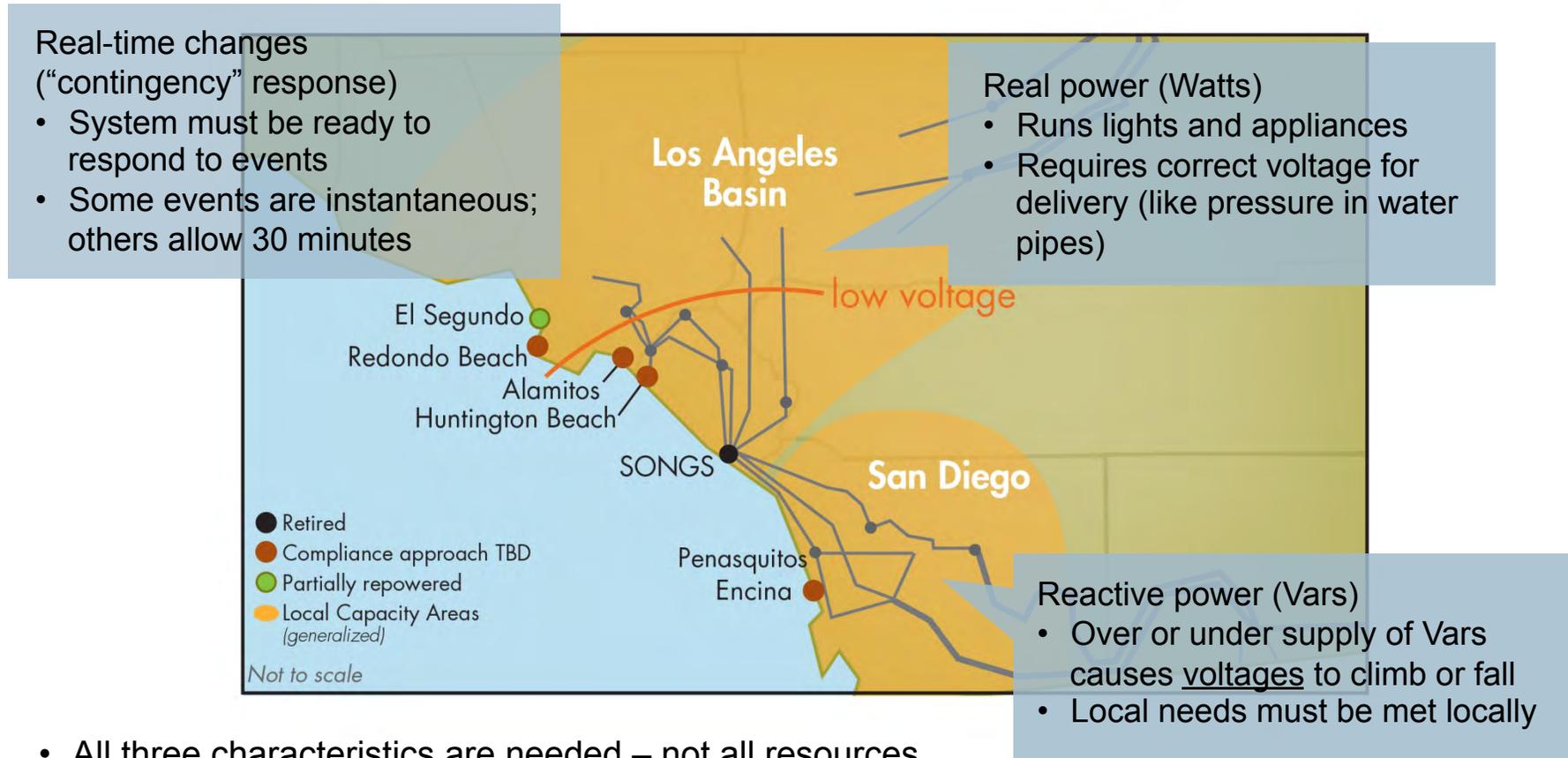
Approach:

- Utilize existing processes to get final decisions on long-term solutions by mid-year 2014. Solutions could include:
 - 50% of incremental need from energy efficiency, demand response, distributed generation, and storage.
 - Authorize transmission upgrades to reduce needs
 - Authorize conventional resources where preferred resources and transmission development is insufficient
 - Establish contingency plans to address key risks
 - Manage critical risks for air permits, transmission siting, preferred resource deployment/effectiveness, natural gas supply

ISO local capacity areas and once-through cooling plants

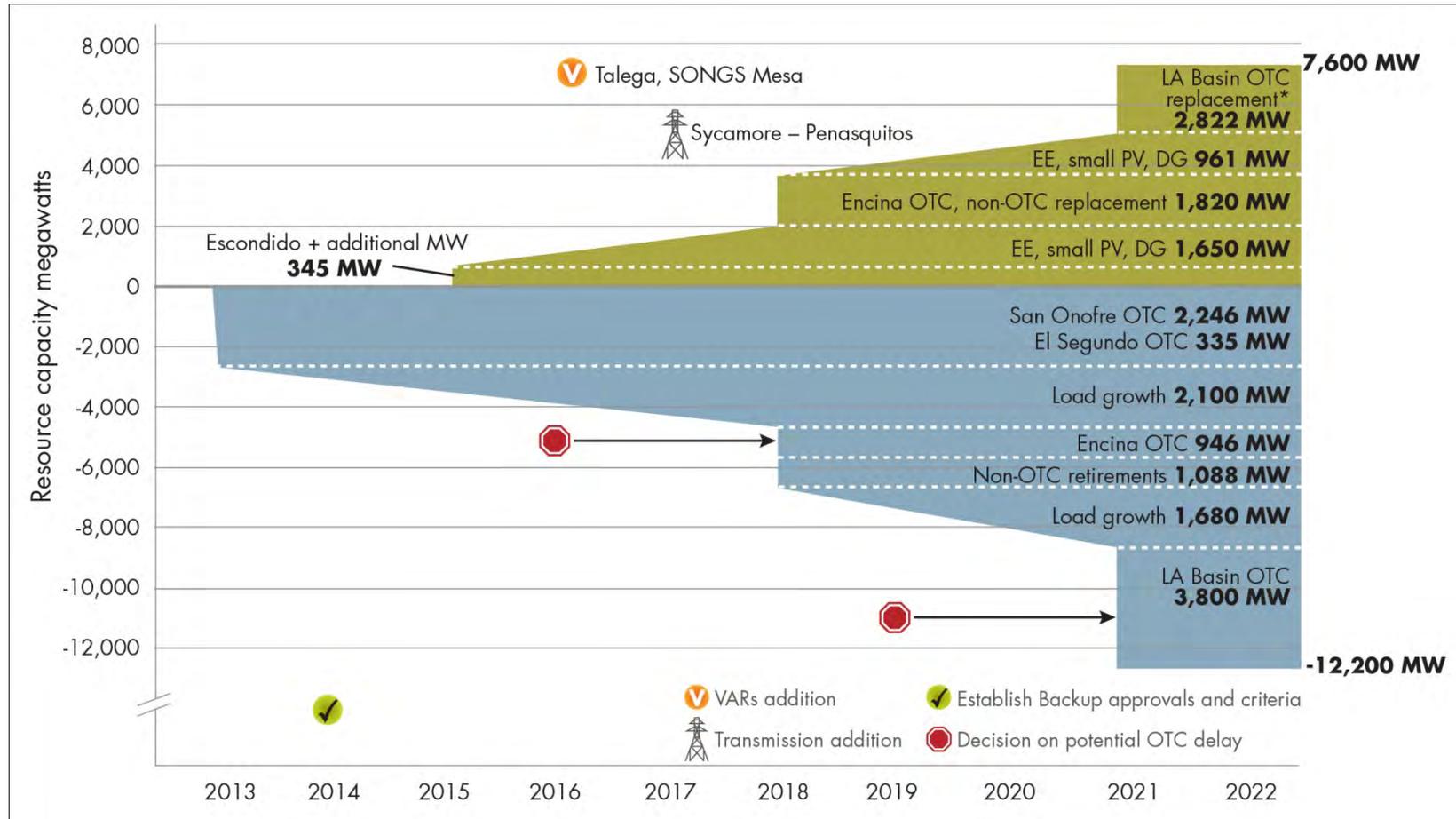


San Onofre closure causes reliability problems in Southern California because Los Angeles and San Diego are load pockets with limited options



- All three characteristics are needed – not all resources can provide.
- Compliance with once-through cooling schedule compounds the issues.
- San Onofre provided: 2,246 MW in the LA Basin
1,100 MVars supporting voltages between Los Angeles & San Diego

Expected resource needs and potential solutions



Total load in LA Basin & San Diego:
 2018 = 27,500 MW
 2022 = 29,000 MW

*1,800 MW authorized
 •May include additional preferred resources
 •Transmission could further reduce need

No single resource can meet both reliability needs and state policy objectives

Type	Energy (MWs)	“Contingency” response	Voltage support (VARs)	Direct GHG emissions
Energy Efficiency	Yes ²	Yes ²	Yes ²	Low
Demand Response	Yes	Yes	No	Low
Combined Heat & Power	Yes	Maybe	Yes	High
Storage	Yes	Yes	Maybe	Medium ¹
Rooftop Solar	Yes	No	No	Low
Synch Condenser and other voltage support devices	No	Yes	Yes	Medium ¹
Gas Peaker/CT	Yes	Yes	Yes	High
Gas Combined Cycle	Yes	Yes	Yes	High
Transmission	Yes	Yes	Yes	Medium ¹

[1] The GHG attributes of storage, synchronous condensers, and transmission depend on the energy used from the grid

[2] Reduces overall load and requirements

Specific near term actions (2013 - 2018)

VARs	MW	VARs & MW
Review permits for Talega & San Onofre Mesa projects	Flex-Alert funding beyond 2014	Maintain capacity at Cabrillo II
Extend Huntington Beach synchronous condensers	Permit construction of Sycamore-Penasquitos 230kv line	Timely action on Pio Pico
Modify San Onofre voltage criteria (w/SCE)	Authorize acceleration of EE, DR, DG, and storage procurement in target areas	Authorize procurement to replace Encina
Evaluate conversion of one San Onofre unit to a synchronous condenser	Evaluate transmission alternatives	Timely decisions to license replacements for OTC capacity
	Develop & implement multi-year auction for DR and EE	Create contingency permitting process

CPUC
 CEC
 ISO

Ensuring reliability 2019 & beyond

CPUC

- Authorize additional resources thru LTPP and other proceedings, including EE, DR, DG, storage
 - Direct SDG&E and SCE to pursue contingency permits in Northern San Diego County and LA Basin that will be competitively bid to independent generation developers
 - Address potential need for gas infrastructure in San Diego

CEC

- Conduct siting review of contingency generation
- Establish contingency approach to OTC compliance deadlines in consultation with the State Water Resources Control Board

ISO

- Consider transmission alternatives - AC, DC, sub-marine cables
- Monitor system upgrades in collaboration with the CEC and CPUC
- Trigger contingency backups



Commitment to Preferred Resources

- CPUC will seek to add 800 MW to 1000 MW of Distributed Generation, Demand Response, Efficiency, and storage on top of the 3,000 MW already targeted for the state. This commitment has several key challenges.
 - The additional resources will need to be geographically located
 - Resource mix will need to be established so that it offsets need for voltage support
 - Timing is critical.

Long Term Procurement Plan Proceeding

- Studies needed for new resources, both amount of resources and type (operational characteristics).
- Authorizes utilities to procure new resources, balancing clean preferred resources (e.g. DR) with operational needs.
- Currently studying needs related to:
 - San Onofre retirement
 - System-wide flexible capacity
- Decision expected in early 2014.

CPUC Resource Authorization

LTPP Tracks	Decision	Objective/Outcome
Completed in Track I Local Area needs in SCE territory	D.13-02-015	Authorized 1400-1800 MW in LA Basin.
Early 2013 Local Area needs in SDG&E Territory	D.13-03-029	Authorized 343 MW in San Diego
Track II Operating Flexibility needs across the system	Expected March 2014	Examine the need for new resources to maintain reliability, and authorizes procurement if needed.
Track III AB 57 “Bundled Procurement” rules for IOUs	Expected late 2013	Authorizes and approves any rule changes to IOU bundled procurement plans.
Track IV Local Area needs with and without SONGS	Expected Dec 2013 (or Feb 2014 if hearings occur)	Determine resource needs in the LA Basin and San Diego without SONGS online, and authorizes procurement.

Resource Procurement Timeline - LTPP

At the September 4th Prehearing Conference, two schedule change proposals were made. The ISO requested the CPUC delay the new resource Authorization Proposed Decision until transmission studies can be considered (studies available end of January 2014). The ALJ proposed a schedule with an interim resource Authorization Proposed Decision with later adjustments if necessary.

Schedule Options (ALJ requests Comment by 9/10):

- Current: Proposed Authorization Decision late 2013 or 2014 Q1, RFOs 2014 Q1/2, PPA Approval early 2015;
- ISO proposal: Proposed Authorization Decision 2014 Q3, RFO 2014 Q4, PPA Approval late 2015;
- ALJ Proposal: Interim Proposed Authorization Decision late 2013 or 2014 Q1, RFOs 2014 Q2, Adjustments to Authorization 2014 Q2/3, PPA Approval early 2015.

Additional 2013-14 Authorizations

LTPP Track IV Examining local area needs without SONGS		
Major Analytical Work	Expected Proposed Decision	Potential Outcome
CAISO, SCE, SDG&E, City of Redondo Beach filed studies in August	~December (if no hearings) ~ February (if hearings)	CPUC could authorize additional resources, including LA Basin or SD
LTPP Track II Examining system operational flexibility needs		
Sept: studies scheduled for filing	~ March (if no hearings)	CPUC could authorize additional resources for flexibility (renewable integration) needs

Extend Huntington Beach Synchronous Condensers

- Units 3 & 4 converted to synchronous condensers for voltage support; summer 2013
- Operate under Reliability Must Run contract with CA ISO; annual extension possible
- December 31, 2020 end of operation date for Huntington Beach facility under current permit
- HB site repowering plans could mean 2016 and 2017 retirement dates for these units

Transmission proposals under review*





Consider implementing a multi-year auction to assist in procurement of DR and EE

- Develop an ISO auction mechanism to help procure authorized quantities in the local areas
- Specify reliability based demand capacity differentiated by availability and duration attributes
 - Example, 2hr, 4hr, 6hr resources available within 30 min
- Acquire resources that will bid and schedule in the ISO market
- Ensure capacity qualifies as local RA capacity
- Target 2015 RA compliance year, first auction held summer 2014
- Timing dependent on:
 - CPUC RA compliance year process
 - ISO initiatives on non-transmission alternatives and must offer obligation for use-limited resources

Timely License Decisions to Replace Once-Through Cooling Capacity

- 3 proposed repowers (natural gas combined cycle, dry cooled, fast start facilities) in CEC's Application for Certification (AFC) review and amendment process
 - El Segundo Energy Center - proposed license amendment for new 440 MW units; 560 MW units just began operating; phase-out scheduled for only remaining unit in 2015
 - Redondo Beach Energy Project – 496 MW
 - Huntington Beach Energy Project – 939 MW
- Alamitos AFC filing expected late 2013 or early 2014 – approximately 2,000 MW



6-Month Permitting Process

- Explicit CEC statute authority dates from 2001
- Possible that current CEC authority would allow if same screening criteria being used:
 - Comply with all legal requirements
 - No public health or safety concerns
 - No significant adverse environmental impacts
 - No adverse impacts on electrical system
 - Little or no public controversy
 - Site control
- Would require flexibility within licensing rules and development time frames, but could shorten lead times to operation
 - Previous 100-day determination requirement by local agencies no longer in force



Contingency Permitting Process

- Use CEC's Notice of Intention process to approve potential sites ahead of actual applications
- As resource needs identified and authorized, sites available for a competitive solicitation process
- SDG&E Energy Park and SCE high value reliability sites are possible examples



Contingency Approach to Once-Through Cooling Compliance Dates

- Delays triggered if preferred resource development not on schedule or performance not as expected
- Work with State Water Resources Control Board to establish circumstances that could justify delays and to implement
 - Limited delays (1-3 years)
 - Delays could allow more time to develop preferred resources

Questions

