

# Overview of 2016 Draft Report by the Statewide Advisory Committee on Cooling Water Intake Structures

Prepared by the Inter-Agency Working Group

SACCWIS Meeting

April 18, 2016

# Agenda

- Background
- Recent Development & Progress towards goals
- Water Usage by the OTC Fleet
- Relevant Actions by CEC, CPUC, and ISO
- Update on Existing OTC Plants & Generator Plans
- Recommendations & Next Steps

# OTC Compliance and Infrastructure Planning

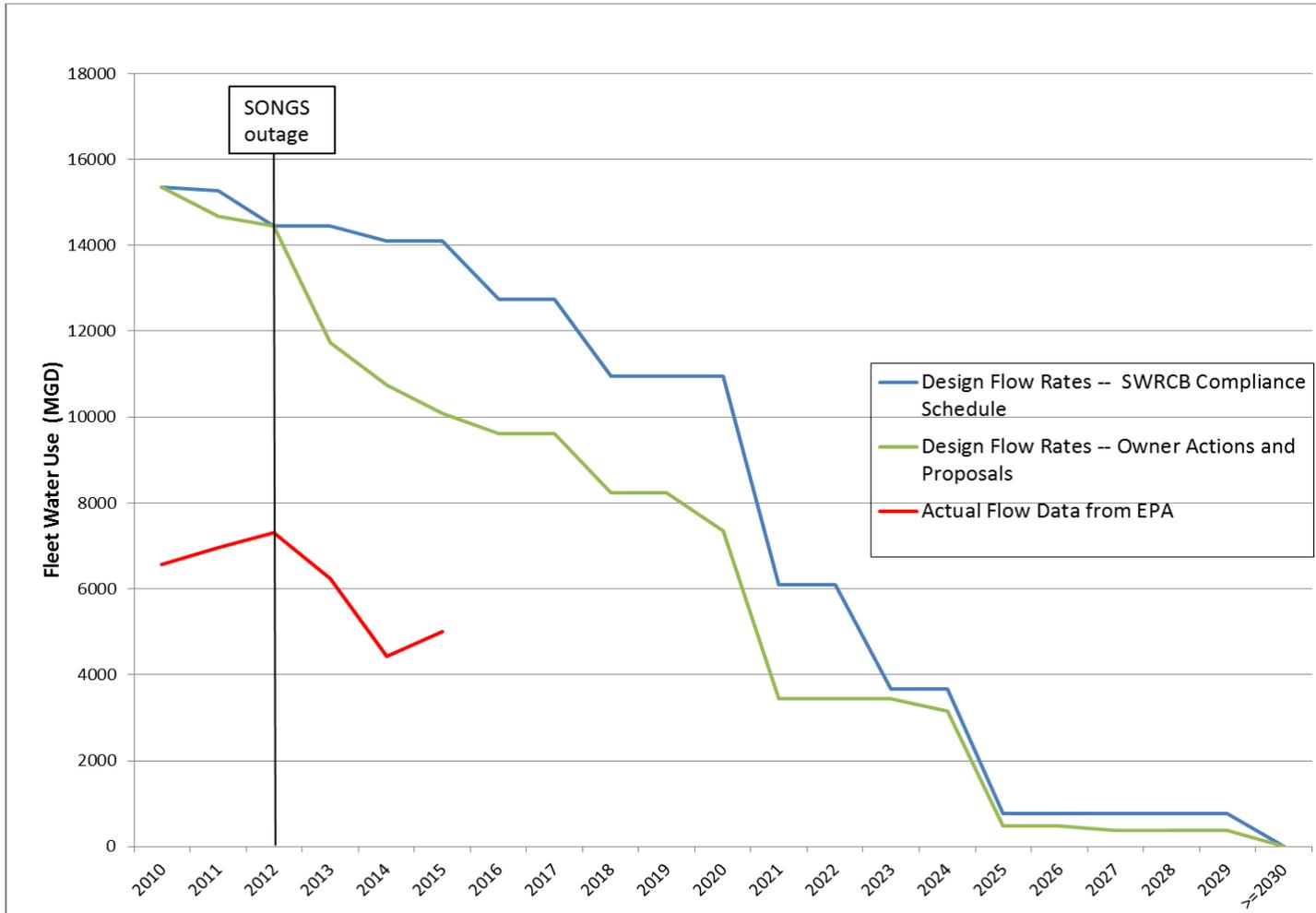
- SACCWIS annual review of adopted OTC facility compliance dates for infrastructure realities is a key element of adopted OTC policy
- CPUC, ISO and CEC continue to assess resource, infrastructure and reliability needs:
  - CPUC Long-Term Procurement Plan (LTPP)
  - ISO Transmission Planning Process (TPP)
  - CEC Application for Certification Process (AFC)

# Once-Through Cooling Compliance Achievement

Facility & Units	Net Qualifying Capacity	Compliance Date	Retirement Date
Humboldt Bay 1, 2	135	Dec. 31, 2010	Retired Sept. 30, 2010
South Bay	296	Dec. 31, 2011	Retired Dec. 31, 2010
Potrero 3	206	Oct. 1, 2011	Retired Feb. 28, 2011
Huntington Beach 3, 4	452	Dec. 31, 2020	Retired Nov. 1, 2012
Contra Costa 6, 7	674	Dec. 31, 2017	Retired April 30, 2013
El Segundo 3	335	Dec. 31, 2015	Retired July 27, 2013
Haynes 5, 6	530	Dec. 31, 2013	Retired June 2013
San Onofre 2, 3	2,246	Dec. 31, 2022	Retired June 7, 2013
Morro Bay 3, 4	650	Dec. 31, 2015	Retired Feb. 5, 2014
El Segundo 4	335	Dec. 31, 2015	Retired Dec. 31, 2015
Scattergood 3	497	Dec. 31, 2015	Retired Dec. 31, 2015

\*Converted to Synchronous Condensers on interim basis to provide voltage support due to SONGS retirement

# Historic and Projected Water Usage Combined OTC Fleet



Source: CEC and SWRCB Staff

# CEC Actions

- Alamitos – AES filed SAFC October 2015; PDOC needed from SCAQMD to complete PSA
- Huntington Beach – AES filed PTA September 2015; PDOC from SCAQMD needed to complete PSA
- Redondo Beach – AES and City of Redondo Beach filed petition for suspension of AFC November 2015; CEC ordered proceeding suspended
- Mandalay – staff working on waiting on PDOC from VCAPCD to complete PSA for Puente Power Project
- El Segundo – ESEC AFC suspended by applicant
- Carlsbad Energy Center – PTA approved November 2015; licensing complete

# CPUC Actions (LTPP)

- Approved contracts for a total of 1,813 MW of capacity in SCE territory
  - 1,382 MW of gas fired generation
  - 431 MW of preferred resources and energy storage
  - 274 MW of resources for Moorpark subarea are under review
- Approved 500 MW re-power of Encina Power Station
  - Directed SDG&E to allocate an additional 100 MW to preferred resources and energy storage
  - Commission Decision has since been contested and is under review by the Court of Appeal

# ISO Actions

- Continued facilitation of OTC compliance by approving transmission infrastructure, as well as support of CPUC-LTPP proceeding via grid operating and planning
- The ISO's analysis in its most recent 2015-16 TPP indicates that the authorized resources, forecast load with projected Additional Achievable Energy Efficiency, and previously-approved transmission projects working together meet the reliability needs in the LA Basin and SD
  - Potential delay of Mesa Loop-In project to 2021 could result in need for temporary extension of Redondo Beach or Alamitos compliance
  - ISO will be conducting additional sensitivity studies in 2016 to determine impact of potential delay of online date for Carlsbad Energy Center Project

# Pittsburg (2017)

- Units 5-6 are twin 340MW steam boilers; Unit 7 is 720MW with cooling towers
- Final compliance date is December 31, 2017
- NRG intends to eliminate OTC at Units 5 and 6, and retire Unit 7, but needs PPA
- Lack of a contract could lead to permanent retirement
- The ISO will be conducting studies in 2016 to confirm whether Pittsburg is required for local capacity needs after compliance deadline
- SACCWIS does not recommend a change in compliance dates

# Moss Landing (2020)

- Moss Landing is the single largest power generating facility in California (2500 MW).
  - Units 5-6 are old steam boilers, 750 MW each
  - Units 1-2 are new combined cycles, 500 MW each
- ISO operating procedures currently assume that plant is operated under high peak load conditions for the Greater Bay Area
- OTC Compliance Deadline is December 31, 2020
- Dynegy stated intent to pursue Track 2 compliance in Nov. 2014 for Units 1 & 2
- Variable speed drive controls on Units 1-2 expected to be installed by December 31, 2016 deadline to comply with the SWRCB Policy on OTC plants

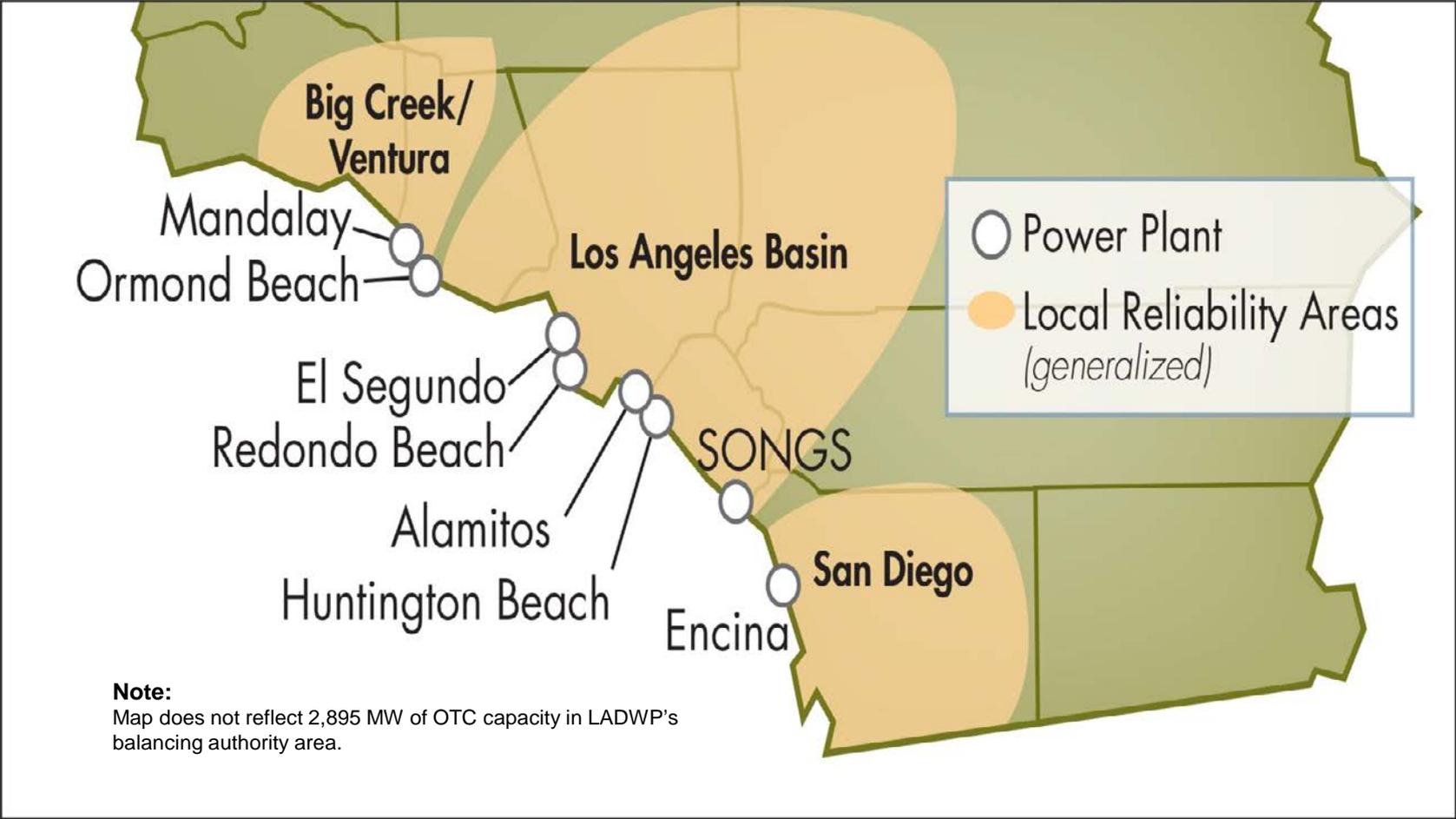
## **Ormond Beach (2020)**

- Consists of two steam boiler units with total combined capacity of 1,486 MW
- CPUC authorized 215-290 MW in area where Ormond Beach and Mandalay are located (i.e., Moorpark subarea)
- Settlement with SWRCB in October 2014 determined Track 1 compliance infeasible
- NRG stated in February 2016 intent to comply using Track 2 compliance and reports it is on track to comply with OTC policy by December 31, 2020
- SACCWIS does not recommend a change in compliance dates

# Mandalay (2020)

- Units 1 & 2 use once-through cooling; 215 MW each
- NRG
  - intends to build 262 MW peaker to replace Units 1 & 2 with COD of June 1<sup>st</sup>, 2020 (Puente Power Project)
  - filed AFC with CEC in April, 2015; and application for air permits in March, 2015 – both applications under review
  - PPA between SCE and Puente Power Project currently under CPUC review
  - ISO modeling 262 MW project as well as 12.5 MW of preferred resources to replace Mandalay and Ormond Beach generation
- SACCWIS does not recommend a change in compliance dates

# Los Angeles Basin and San Diego Local Capacity Areas



# Redondo Beach (2020)

- Consists of four units; total capacity is approximately 1,300 MW
- Proposed repowering project is a natural-gas fired, combined-cycle, air-cooled electrical generating facility with a net generating capacity of 496 MW
- AFC suspended November 2015
- ISO 2015-16 TPP show indicate that potential delay of Mesa Loop-In to 2021 could result in need for temporary extension of Redondo Beach or Alamitos compliance
- SACCWIS does not recommend a change in compliance dates

# Encina (2017)

- Consists of five steam boiler generating units using once-through cooling with an aggregate capacity of 950 MW.
- CEC approved 500 MW Carlsbad Energy Center Project (CECP) November 2015
- NRG expects delay of CECP online date to winter 2017-2018 (Q1 2018)
- ISO will be conducting sensitivity studies of summer 2018 to determine if some Encina capacity must be online to satisfy local reliability requirements
- SACCWIS will continue to monitor and bring forward any recommended compliance date change based on more complete information
- SACCWIS does not recommend a change in compliance dates at this time

# Alamitos (2020)

- AES awarded 640 MW PPA with SCE in November 2014, smaller capacity than submitted in the AFC to CEC
  - Previously proposed repowering project consists of natural-gas fired, combined-cycle, air-cooled electrical generating facility with a net generating capacity of 1,936 MW
- AES filed SAFC October 2015; PDOC needed from SCAQMD to complete PSA
  - AES intends to provide additional information to CEC reflecting 640 MW CCGT, 300 MW energy storage, and 400 MW peakers
- ISO 2015-16 TPP show indicate that potential delay of Mesa Loop-In to 2021 could result in need for temporary extension of Redondo Beach or Alamitos compliance
- SACCWIS does not recommend a change in compliance dates at this time.

# Huntington Beach (2020)

- AES plans to retire Unit 1 by October, 2019 to facilitate replacement facility of 644 MW CCGT with COD of May 1<sup>st</sup>, 2020
- Proposed repowering project impacts both Huntington Beach and Alamitos; Huntington Beach Unit 2 will retire by December 31, 2020.
- SACCWIS does not recommend a change in compliance date at this time

# Conclusions

- No recommendations for compliance date changes are proposed at this time.
- ISO and CPUC have authorized resources to ensure reliability.
- ISO, CEC, and CPUC will continue to monitor developments and perform additional analyses with most recent data available to ensure reliability.
  - To the extent that any proposed plans don't come to pass, staff is evaluating timelines necessary to form a contingency, which could be procuring new resources or deferring existing deadlines.
- The Water Board should recognize that it may be necessary to modify final compliance dates for some generating units.