

ATTACHMENTS



Long Term Procurement Planning: Track 4 SONGS Outage and Local Reliability

ORA Position: The CPUC should wait for preliminary results of 2013 – 2014 Transmission Planning Process (TPP) before authorizing any new procurement for local capacity requirements to replace SONGS. However, if the CPUC does not wait for TPP results, it should authorize procurement of 1,315 – 1,450 MW for SONGS Study Area based on the current record, with emphasis on preferred resources.

Background

May 2013: CPUC issued revised Scoping Memo establishing Track 4 to study the impacts of a premature SONGS closure on local capacity reliability (LCR) needs in Southern California:

- CPUC requested the CAISO model LCR needs for combined LA Basin & San Diego service territories (SONGS study area) for the year 2022.
- Edison and SDG&E each conducted power flow studies for their respective service territories using slightly different assumptions and scenarios than the CAISO.

Aug – Sep 2013: CAISO, Edison, and SDG&E filed opening testimony revealing the results of their power flow studies.

- **CAISO Results:** Showed a need of 2,399 – 2,534 MW for 2022, depending on location of new resources, but recommended CPUC “wait to make a decision about the need for additional resources” until results of preliminary 2013 – 2014 TPP are available in Jan 2014.
- **Edison Results:** Showed no need, but requested CPUC authority to procure 500 MW of new resources through all-source RFO to meet CAISO’s stricter reliability standards.
- **SDG&E Results:** Showed minimum need of 620 MW but requested CPUC authorize 500 – 550 MW of new resources after accounting for 70 – 120 MW of Demand Response.

CPUC Should First Consider Results of 2013–2014 TPP in Order to Determine Actual LCR Need for SONGS Study Area

- CAISO’s August 5 testimony supported waiting for the preliminary results of the 2013 – 2014 TPP in Jan 2014 before authorizing any SONGS-related procurement, as this information would allow the CPUC to consider the appropriate mix of resources to meet LCR needs related to SONGS’ retirement and take into account location effectiveness.
- 2013–2014 TPP results will include additional reactive power solutions and transmission upgrades that were not accounted for in CAISO’s initial modeling.
- Implement a solution that maintains reliability while minimizing total procurement in the SONGS study area.
 - * Assessing need across entire SONGS study area by including and modeling mitigation solutions, such as reactive power and transmission upgrades, will minimize ratepayer costs and reduce GHG emissions.
 - For every MW located in SDG&E’s area, the overall need is reduced by 1.24 MW.
 - * Decisions regarding service reliability should be based on a reasonable record relating to costs, benefits, risks, and affordability.
 - * A special protection system (SPS) should be used as a bridge to maintain system stability and to protect the integrity of the electric grid by automatically taking corrective actions to limit the impact of an extreme event.

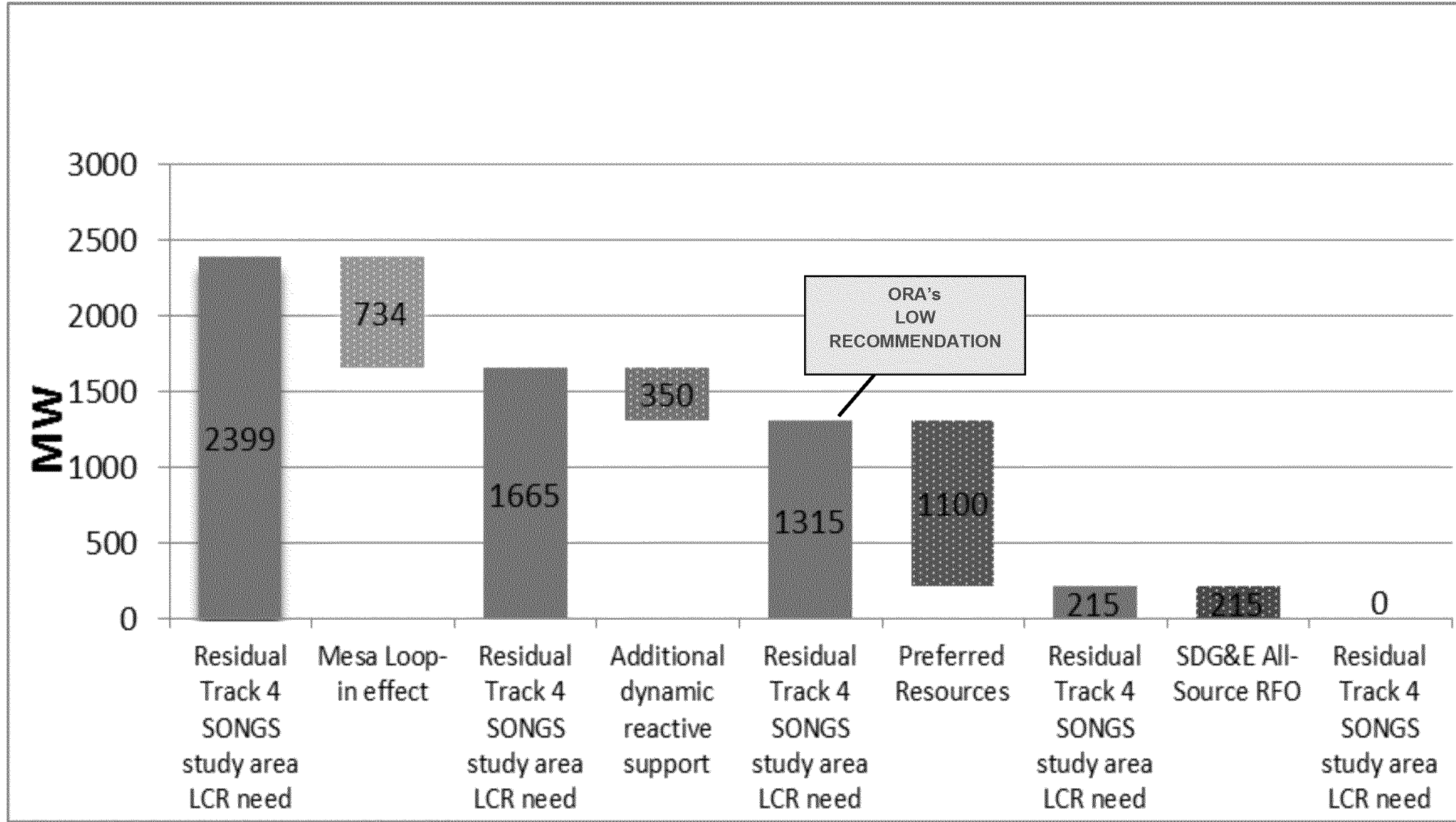


If CPUC Authorizes Procurement for SONGS Study Area Based on the Current Record, It Should Authorize between 1,315 – 1,450 MW, with Emphasis on Preferred Resources

- Authorize 1,100 MW of preferred resources: 700 MW for Edison and 400 MW for SDG&E.
 - * This is based on preferred resource potential from the Scoping Memo but not included in the CAISO's power flow modeling.
- Authorize an additional 215 – 350 MW for SDG&E through an all-source RFO.
- Update any interim procurement authorization based on the 2013 – 2014 TPP.
 - * Revise upward or downward based on more accurate, updated information to allow LCR procurement to be based on the facts, which is more likely to reflect the need that will exist in 2022.
- Allow Edison and SDG&E to procure preferred resources in the manner that they recommend, as long as they meet their goals.
 - * Require clear, concise plans explaining how they plan to meet preferred resources goals, with milestones to measure achievement.
- It is reasonable to prioritize preferred resources given the state's Loading Order and other factors.
 - * The Loading Order requires the utilities to procure resources in a certain order.
 - * Preferred resources displace the need for gas-fired generation and provide ratepayer benefits through reduced GHG emissions.
 - * The record does not demonstrate that a minimum level of gas-fired generation is needed to maintain system reliability given the SONGS outage.
- Interim solutions can be utilized to maintain reliability if preferred resources do not materialize when needed, including:
 - * Temporary extension of Once-Through Cooling compliance deadlines.
 - * An SPS can be used as a bridge until permanent solutions materialize.
 - * Edison's and SDG&E's local generation development reserves.

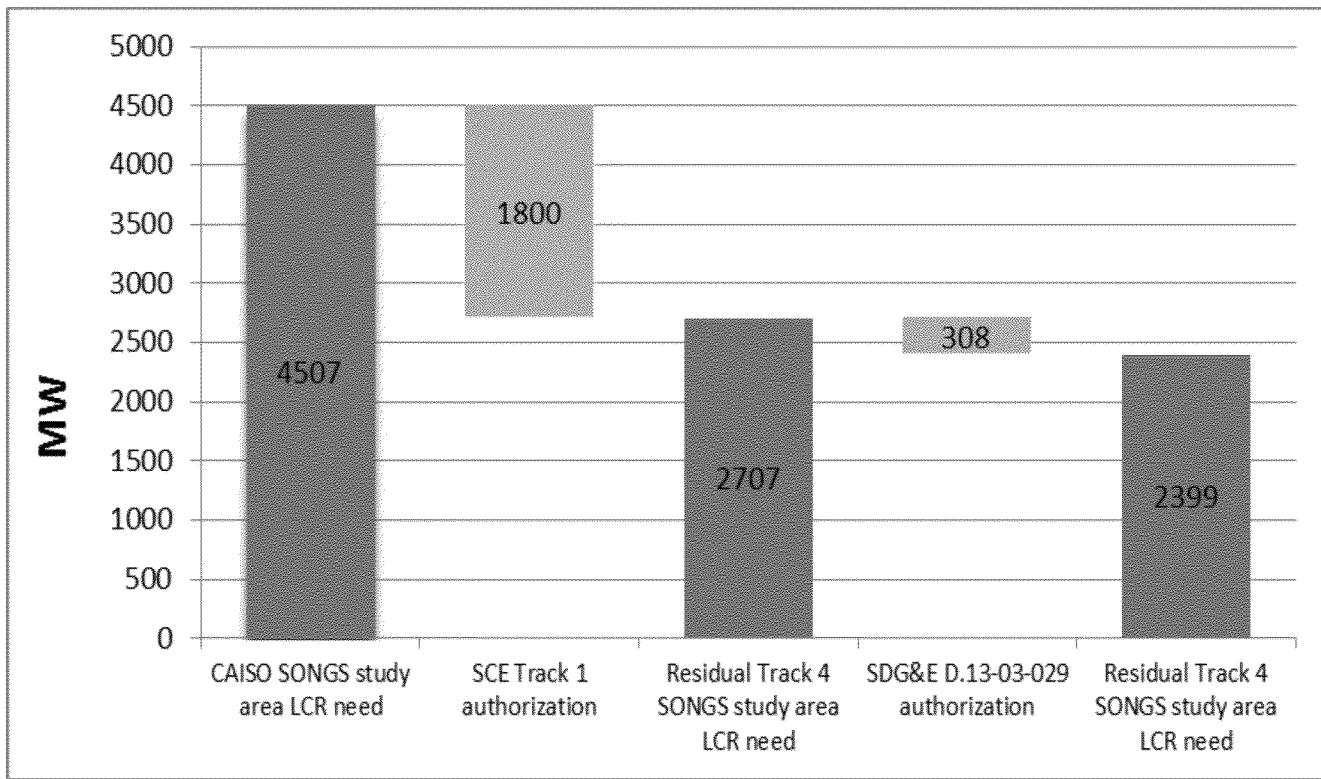
SLIDE 2: ORA's CALCULATION OF SONGS STUDY AREA NEED
 (Based on Current Record)

SCENARIO 1: 2/3 SCE + 1/3 SDG&E = Meeting Residual Track 4 SONGS Study Area LCR Need



Source: Figure 9 in ORA's Opening Brief.

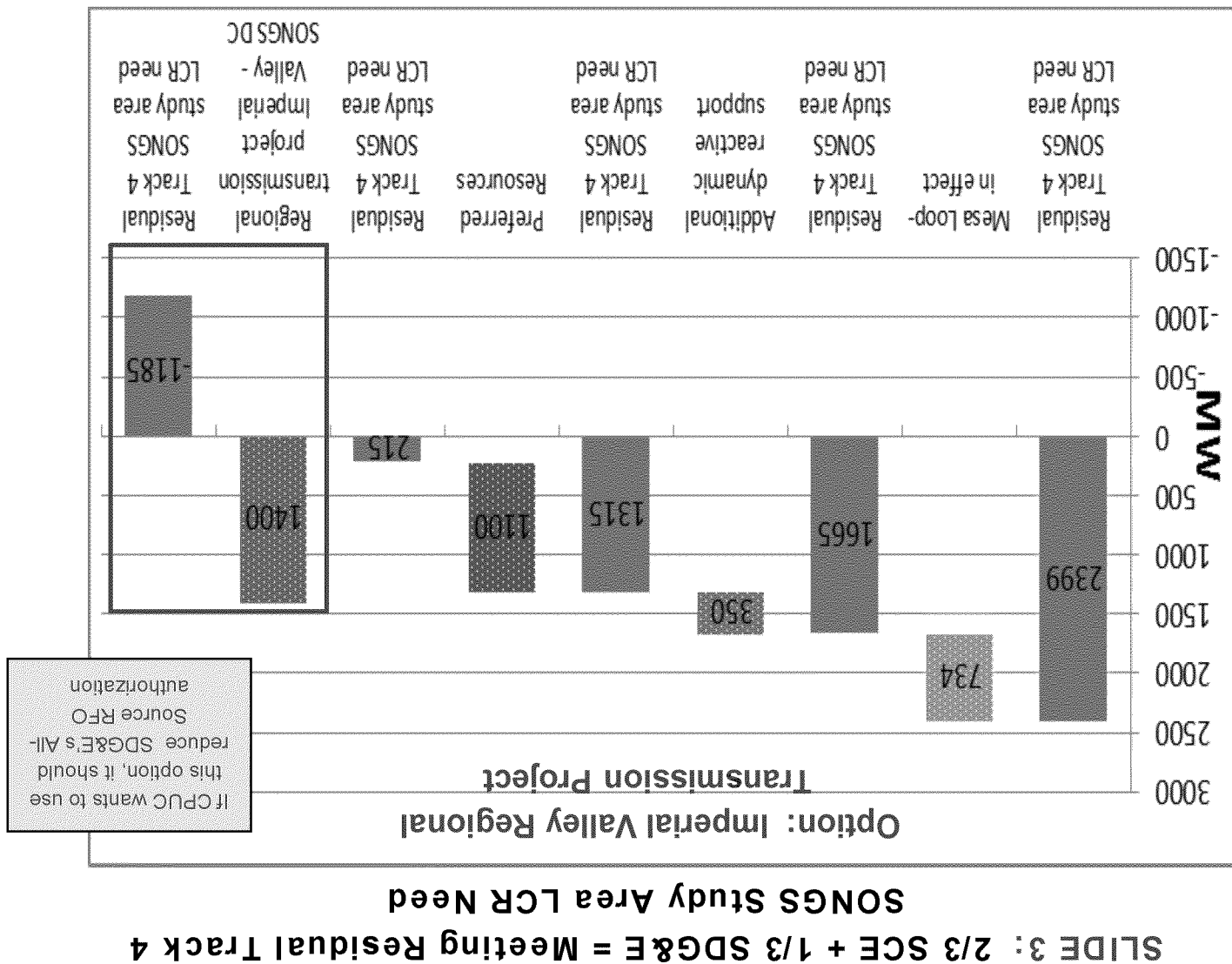
SLIDE 1: 2/3 SCE + 1/3 SDG&E = Meeting Residual Track 4 SONGS Study Area LCR Need



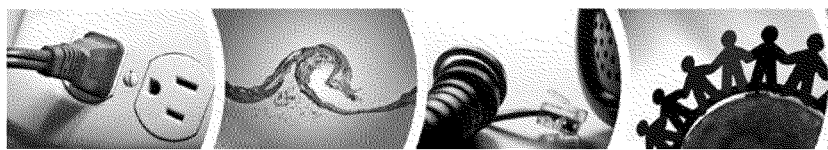
Source: Figure 1 in ORA's Opening Brief.



Source: Figure 11 in ORA's Opening Brief.

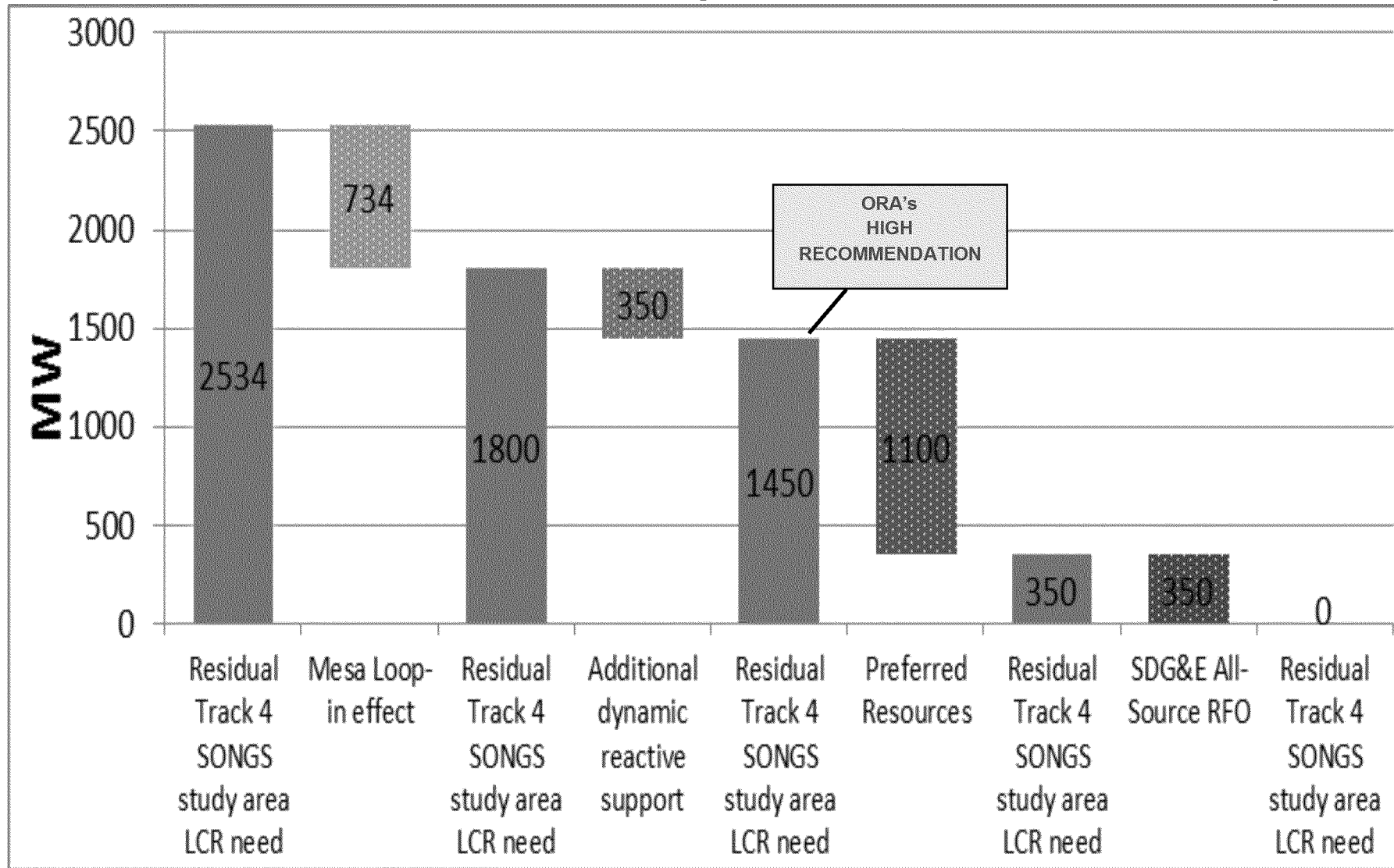


SLIDE 3: 2/3 SCE + 1/3 SDG&E = Meeting Residual Track 4 SONGS Study Area LCR Need



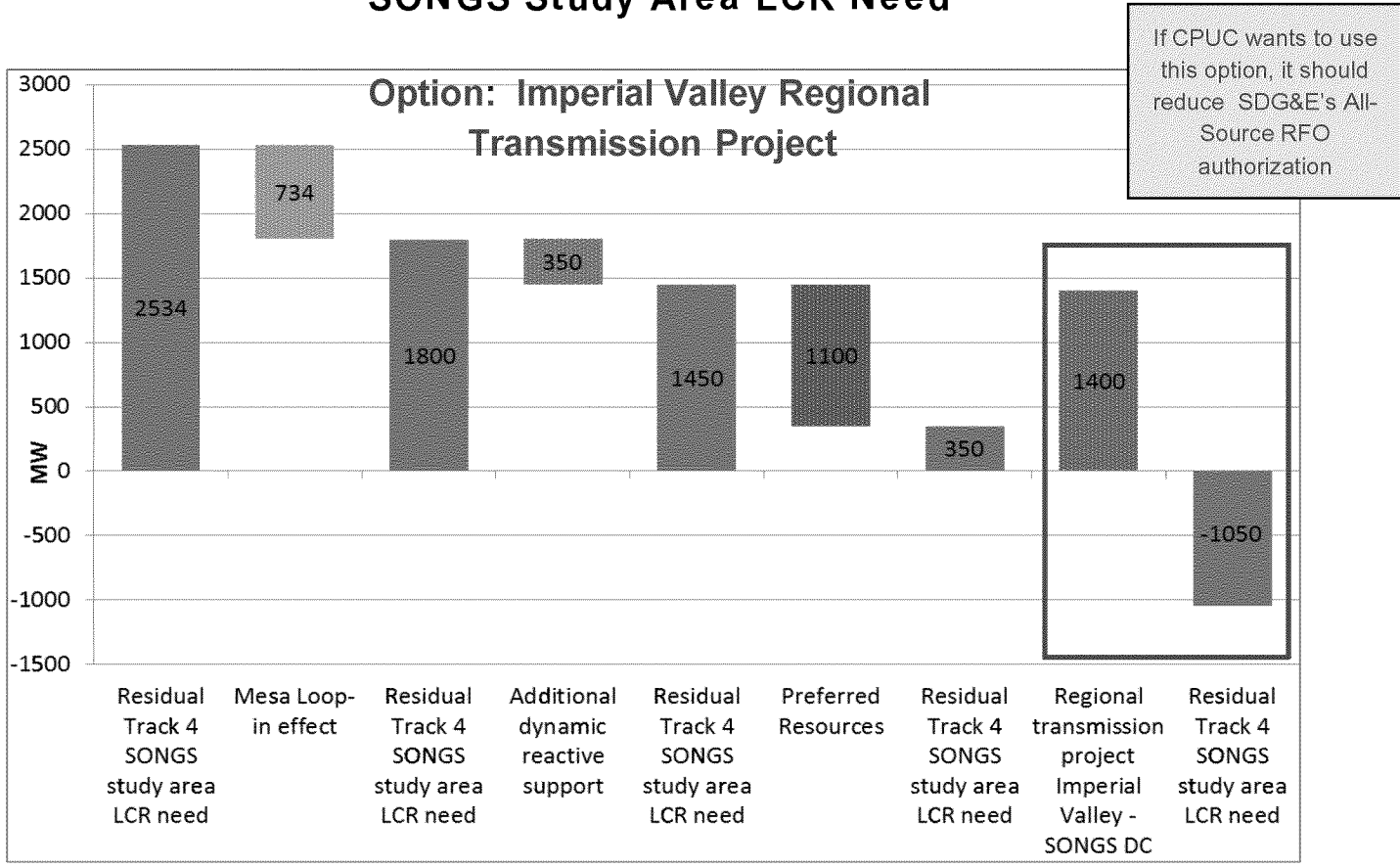
SLIDE 2: ORA's CALCULATION OF SONGS STUDY AREA NEED
(Based on Current Record)

SCENARIO 2: 80% SCE + 20% SDG&E = Meeting Residual Track 4 SONGS Study Area LCR Need



Source: Figure 10 in ORA's Opening Brief.

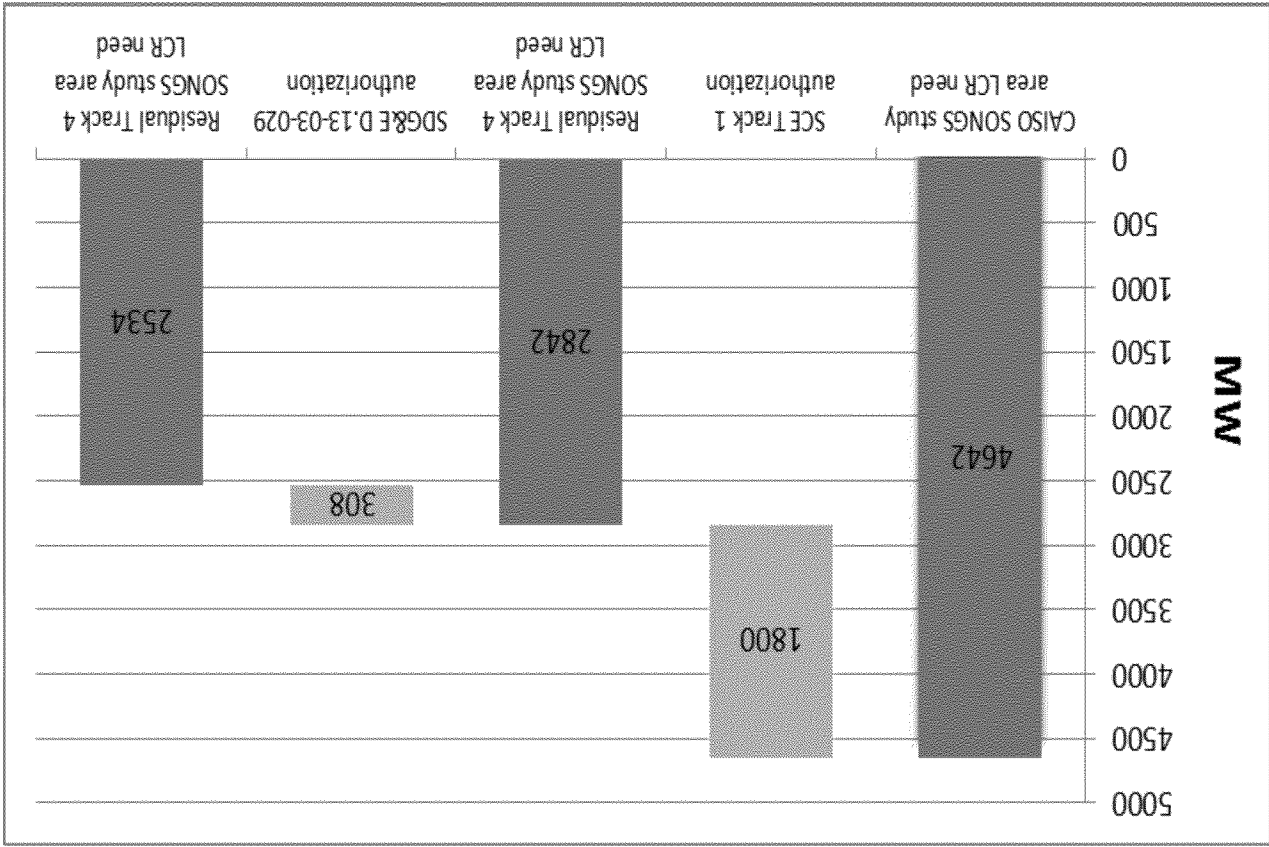
SLIDE 3: 80% SCE + 20% SDG&E = Meeting Residual Track 4 SONGS Study Area LCR Need



Source: Figure 12 in ORA's Opening Brief.



Source: Figure 2 in ORA's Opening Brief.



SLIDE 1: 80% SCE + 20% SDG&E = Meeting Residual Track 4 SONGS Study Area LCR Need

From: Rogers, Nika
Sent: Monday, January 13, 2014 3:31 PM
To: Baker, Amy C.
Cc: Ciupagea, Radu; Lee, Diana; Cox, Cheryl
Subject: Imperial Valley - SONGS Transmission Line

Hi Amy,

See Slide 12 of the attached CAISO presentation for an illustration of the Imperial Valley – SONGS HVDC Line. I was incorrect when I said it runs North to South. The line clearly runs West – East. I confused it with the Aberhill to Suncrest line which was also proposed to as a potential transmission solution to SONGS.

Let me know if you have any additional questions.

Thanks again for meeting with us today.

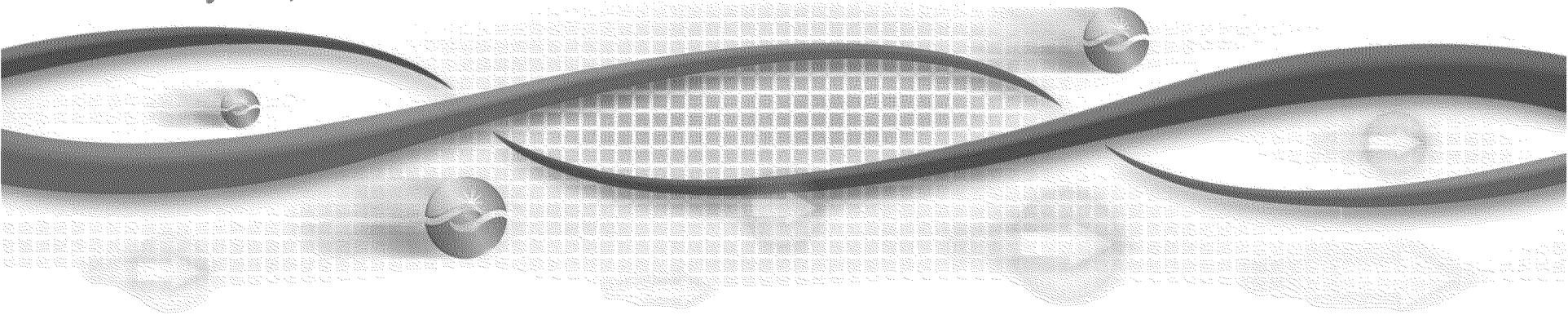
-Nika

CEC/CPUC Joint Workshop Electricity Infrastructure Issues Resulting from SONGS Closure

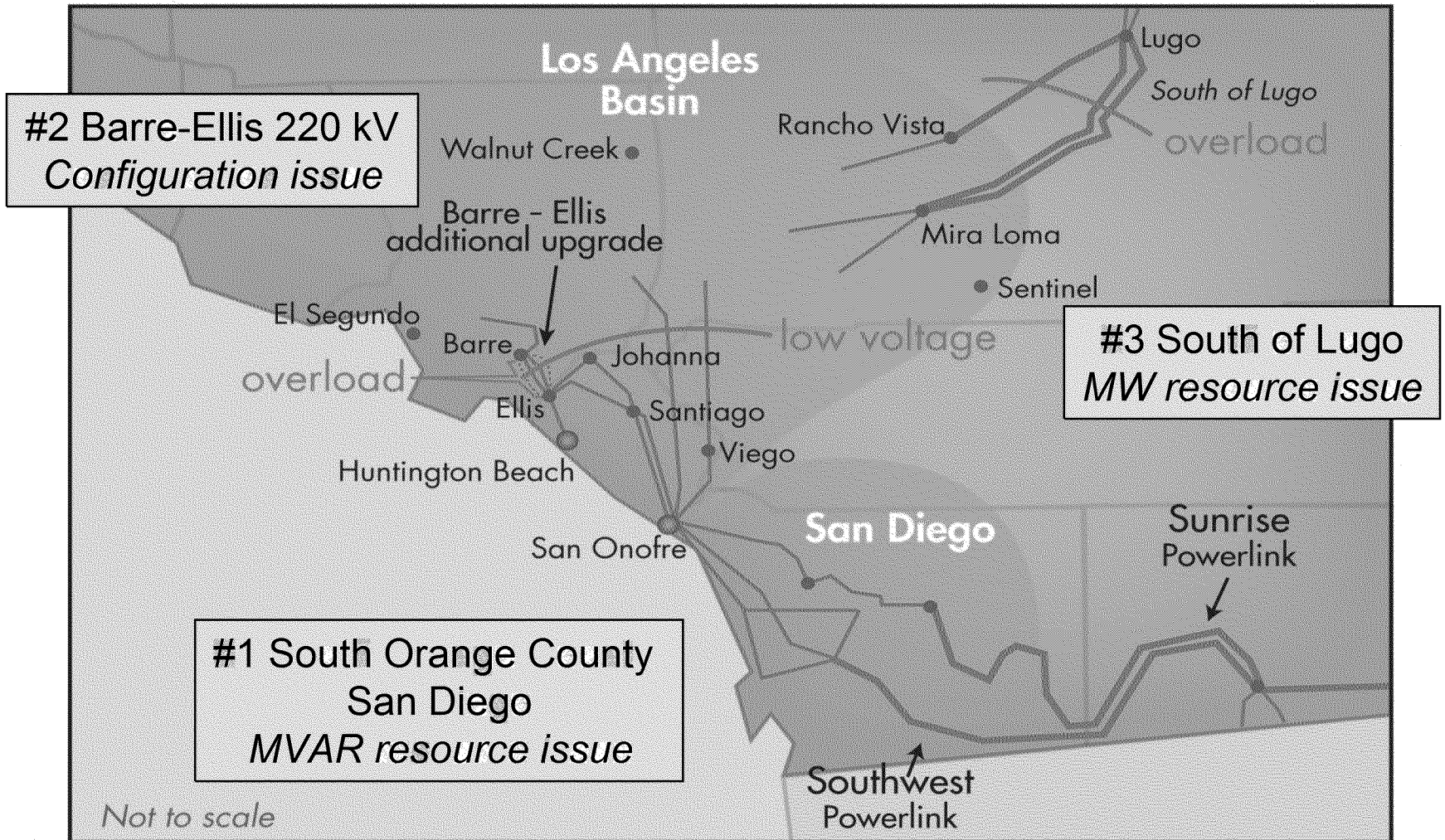
ISO 2013 Transmission Plan Nuclear Generation Backup Plan Studies (SONGS)

Phil Pettingill
Director, Regulatory Strategy

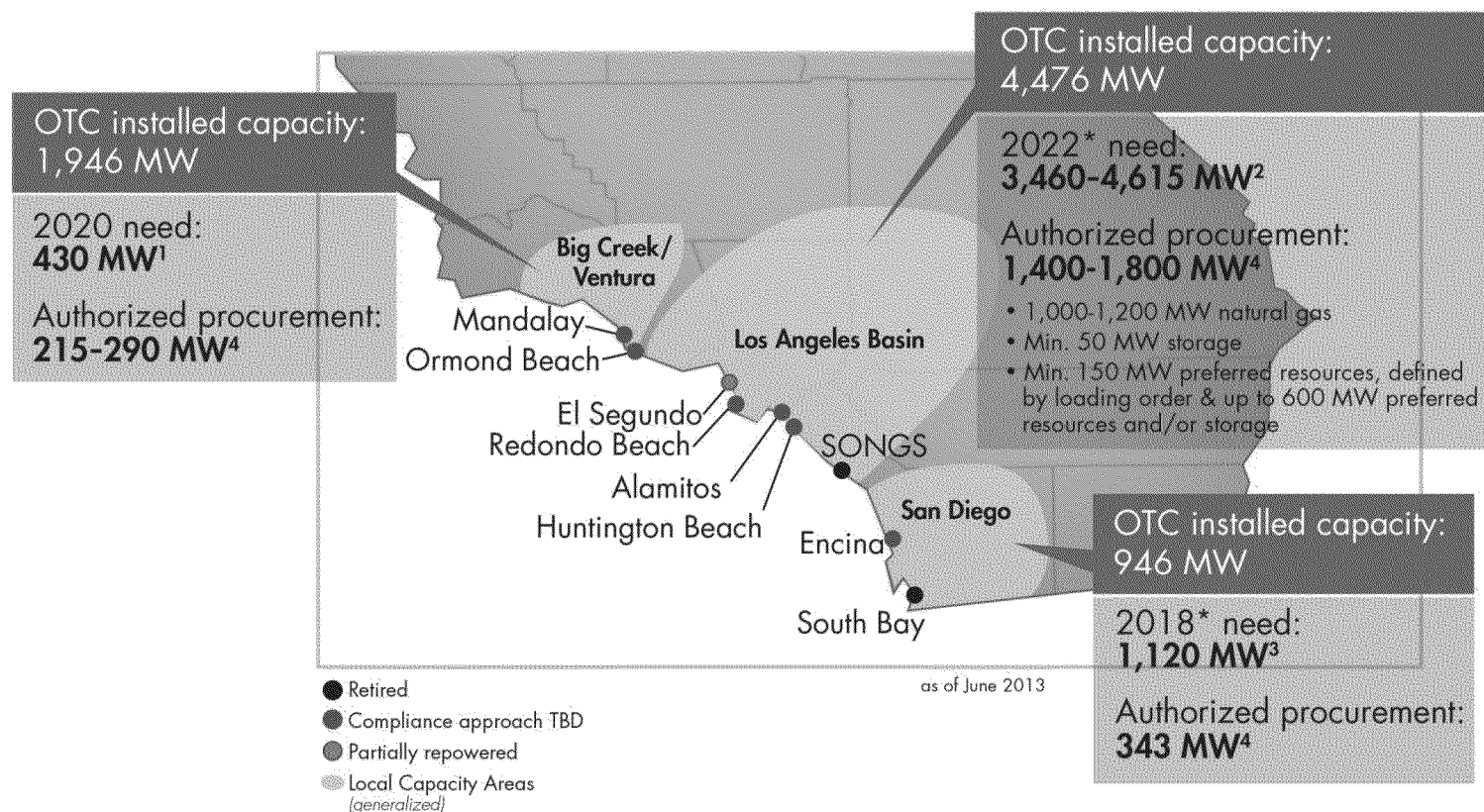
July 15, 2013



Summer 2013 – Absence of SONGS creates reliability issues in South Orange County and San Diego.



OTC retirements and SONGS closure create local capacity shortfalls.



¹ ISO 2011-2012 Transmission Plan – Table 3.3-1

^{2,3} ISO 2012-2013 Transmission Plan – Section 3.5, Nuclear Generation Backup Plan Studies; for LA Basin, low need is preliminary result of sensitivity studies requested by CARB for AB1318 report– includes incremental uncommitted EE, DR and CHP.

⁴ Authorized procurement was based upon analyses that included SONGS online through 2022. The ISO and the CPUC are currently developing new scenarios that exclude SONGS.

*Represents one scenario; others are possible, including a different mix between the LA Basin and San Diego

ISO Nuclear Replacement Study – 2012 - 2013 TPP

Key load forecast and resource assumptions

- 2012 CEC mid forecast
 - Consistent with the 2012/2013 Ten Year Transmission Plan
 - Local area studies used 1-in-10 year weather-related peak load
 - System wide studies used 1-in-5 year weather-related peak load
 - Energy efficiency included continued funding of utility programs as in CEC mid forecast
 - Behind the meter distributed generation as in the CEC mid forecast
- CPUC/CEC renewables portfolios
 - Included both transmission connected resources and system-connected distributed generation

Study Conclusions for Mid and Long Term Studies

- Preliminary conclusions:
 - Loss of SONGS creates transmission impacts (thermal overloading, voltage instability) in LA Basin and San Diego LCR areas
- Possible mitigations for SONGS have been explored, including preferred resources, transmission, conventional generation
- Consider contingency plans to ensure overall success

Mid term (2018) mitigation alternatives – potential for preferred resources to meet some of these needs

Continue use of synchronous condensers

Construct an 11-mile 230 kV line from Sycamore to Penasquitos

820 MW new or replaced

+

300 MW new resources

+

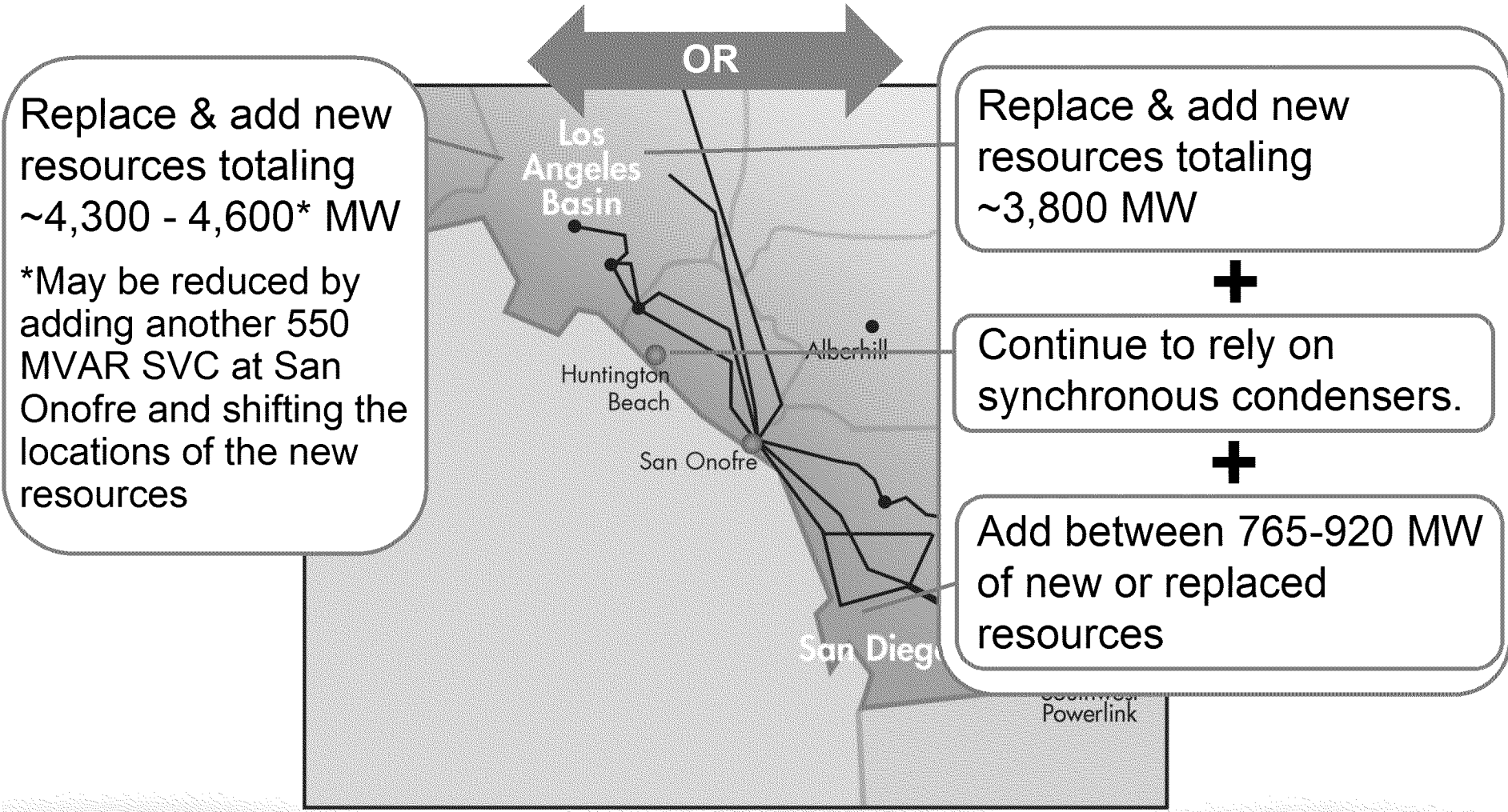
650 MVAR SVC support
• SONGS and San Luis Rey/Talega

965 MW new or replaced in northwest San Diego, and 1460 MVAR SVC support

- SONGS, Talega, Penasquitos, San Luis Rey, Mission

OR

Long term (2022) mitigation alternatives in addition to mid term plan – (no added transmission lines)



Summer 2014 – Summer 2017

- Gradual increase in need in San Diego due to load growth and loss of Cabrillo 2 peakers and Huntington Beach synchronous condensers
- Mitigations:

2014	<ul style="list-style-type: none">- Optimize current resources- Rely on flex alerts and existing demand response and, worst case, first block of SDG&E load shedding for N-1-1 outages.- Extend Cabrillo II (approximately 200 MW) land leases (?)- Possible relaxation of SONGS-area voltage criteria
2015	<ul style="list-style-type: none">- SONGS static VAR compensator and Talega area synchronous condensers- Possible conversion of one or both SONGS generators to synchronous condensers (?)
2016	<ul style="list-style-type: none">- Pio Pico generation (fall 2015 ? – note 343 MW has been approved in 2018 time frame)
2017	<ul style="list-style-type: none">- Sycamore – Penasquitos transmission line

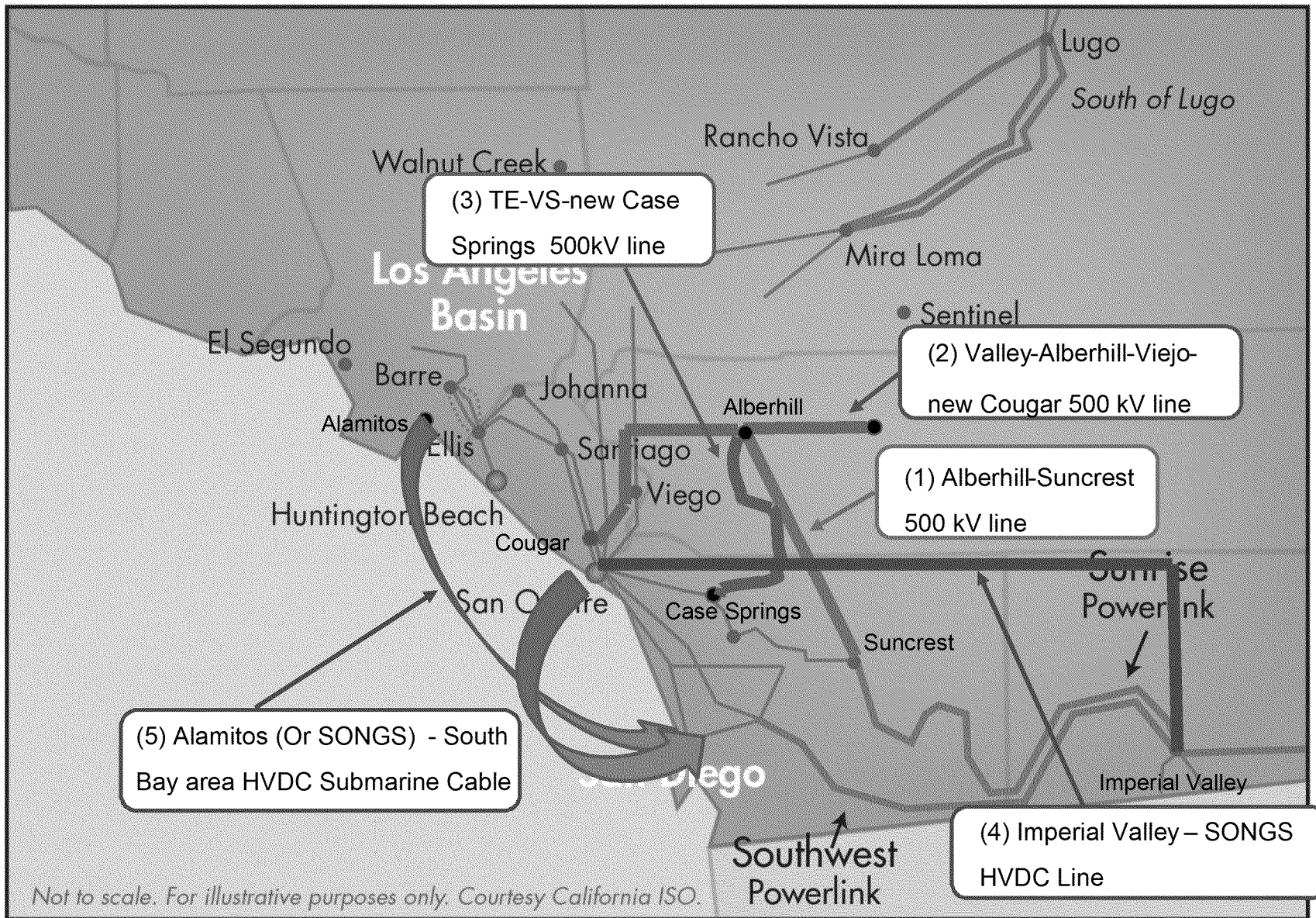
- Status:
 - San Diego area needs significantly increase beyond the impact of load growth - potential retirement of Encina (946 MW) in December 2017
- Mitigations:
 - Acquire additional resources in San Diego sub-area:
 - Opportunities for preferred resources
 - Possible extension of Encina OTC Compliance date
 - 1120 MW resources if distributed within San Diego
 - If all in northwest, 965 MW plus additional 810 MVARs
 - Emphasis on flex alerts, demand response, and emerging incremental energy efficiency

- Status:
 - Continued gradual increase in risk in San Diego due to continued load growth
 - Mitigations:
 - Reliance on existing resources
 - Continued emphasis on flex alerts, demand response, and emerging incremental energy efficiency
 - Opportunities for new preferred resources
 - Contingency suggests we accelerate some of the generation identified in 2021

Summer 2021-2022

- Status:
 - LA Basin area needs significantly increase beyond load growth impacts - potential retirement of 3800 MW in December 2020
- Mitigations:
 - Acquire additional resources in LA Basin and San Diego:
 - 4315 – 4615 MW in LA Basin
 - OR
 - 3800 MW in LA and 800-900 MW in San Diego
 - OR
 - 3000 MW in LA and 600 MW in San Diego with major transmission reinforcement (about 1000 MW local resource capacity reduction)
 - 2013 IEPR load forecast and additional uncommitted EE will help to reduce requirements

Transmission alternatives under consideration:



Uncertainty drives least-regrets conclusions:

- Prior to SONGS shut-down ISO Board approved least-regret considerations for the Mid-Term needs:
 - The Sycamore – Penasquitos 230kV line provides mitigation for the absence of SONGS, as well as mitigation of policy driven needs as identified in the ISO 2012/2013 Transmission Plan; and
 - A total of approximately 650 MVAR of dynamic reactive support in both LA Basin and San Diego areas in a wide range of conditions
- Significant uncertainty is inherent in the studies, conclusions, solutions:
 - Status of pending and future SCE and SDG&E procurement
 - Completion of ISO approved transmission projects
 - Additional levels of energy efficiency that can be achieved in the future
 - Successful deployment of improved and responsive demand response, and other preferred resources

Processes for Approving New Resources

- **Transmission Planning Process (ISO)**
 - Annual overlapping 15 month process; 10 year horizon
 - Initial reliability results in mid-August
 - Draft plan by January 31; present for ISO board approval in March
- **Long-Term Procurement Plan (LTPP) (CPUC)**
 - Proceeding evaluates the need for new resources to meet local area and system reliability needs
 - Updates and reviews IOU bundled procurement plans
 - What to procure, for how long, and with what counterparties
- **Application for Certification Process (CEC)**
 - Lead CEQA agency for certification of thermal generation greater than or equal to 50 MW; one-stop permitting with project coordination local, state, and federal agencies
 - 12-month permitting process begins after project is data adequate, but process may take more or less time depending on site, project complexity, and public concerns
- **Certificate of Public Convenience and Necessity (CPUC)**
 - Lead CEQA agency for IOU owned transmission projects