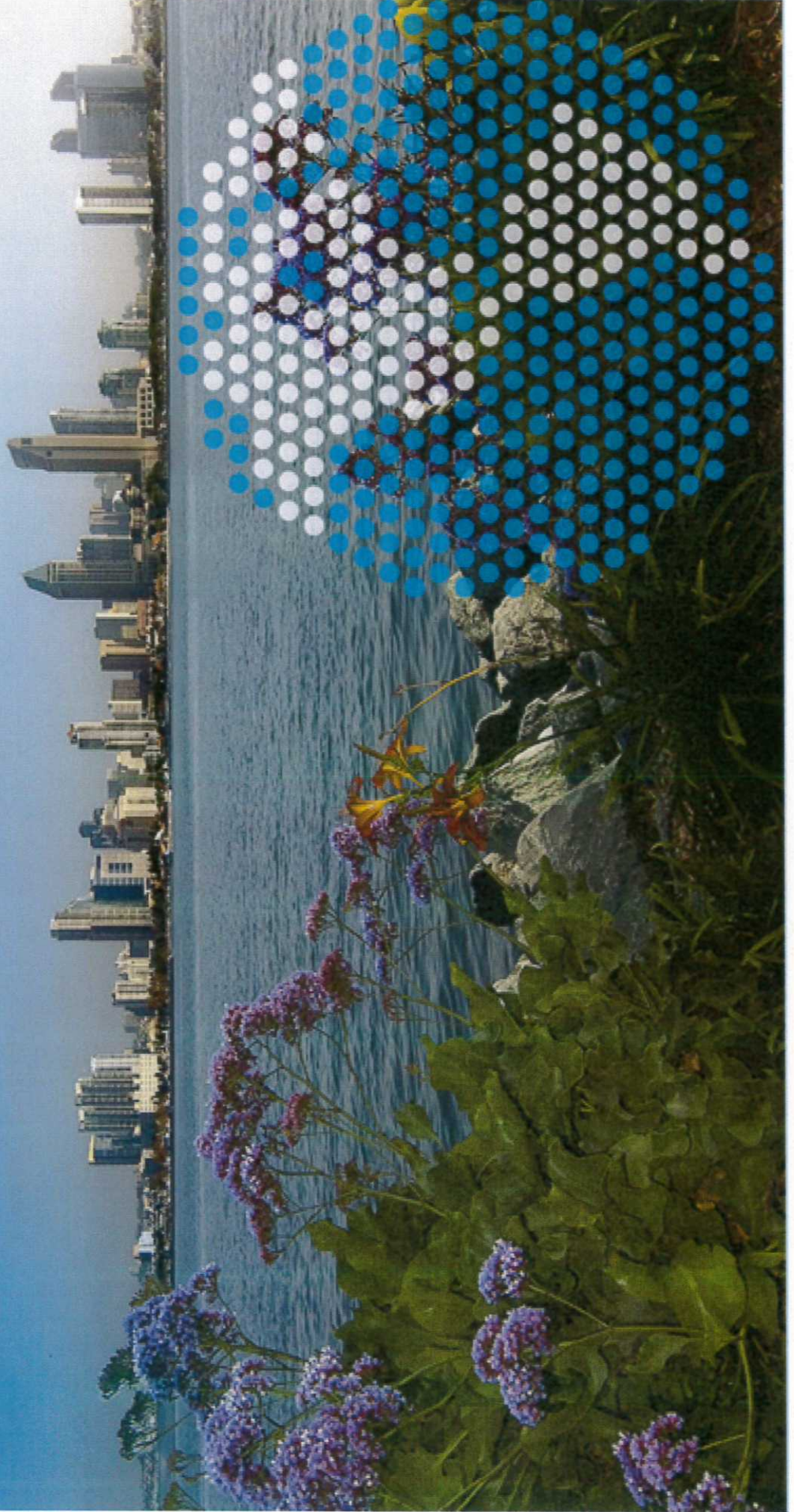


# SDG&E Electrical System Reliability

Senate Committee on Energy, Utilities, and Communications

July 10, 2013





# SDG&E Service Area

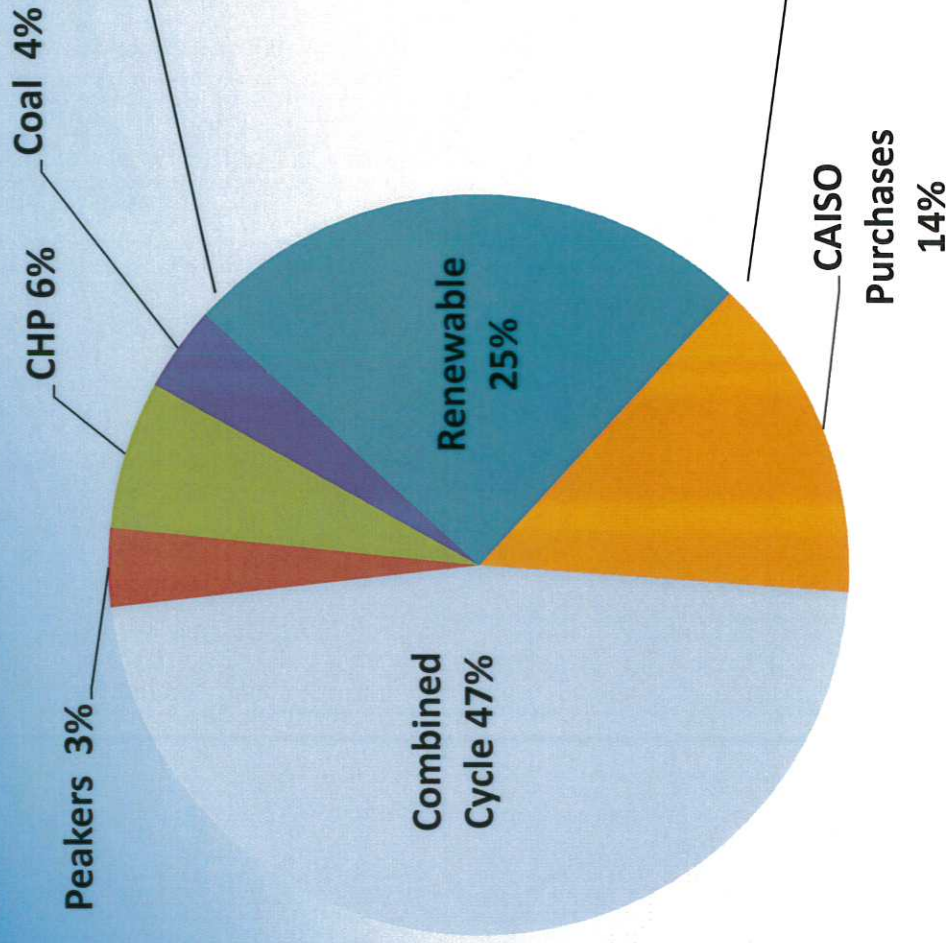
- 2013 Service area load:
  - Expected weather: 4,685 MW
  - Adverse Weather: 5,100 MW
- Local Generation: 3,072 MW
  - Combined cycle plants 1,170 MW
  - Steam Plants 964 MW
  - Peaking units 747 MW
  - Combined Heat and Power 127 MW
  - Renewables and Hydro 64 MW
- SDG&E's share of SONGS: 440 MW

## *Transmission that Supports Imports*

- Major transmission interconnections to the north and east
  - Sunrise Power link was energized in June 2012
- Notable projects completed to assist in voltage support in the absence of SONGS and enhance power transfers between SCE and SDG&E systems
  - Encina Substation - New 230/138 kV transformer
  - Penasquitos Substation - New 230 kV capacitors
- Additional projects completed to reduce congestion costs and improve import capability across the Sunrise and Southwest Powerlinks
  - Kofa Substation (WAPA) -161 kV capacitor addition
  - Sycamore Canyon – Carlton Hills 138kV line reconfiguration



# SDG&E 2013 Forecasted Energy Mix



Total Energy Mix

Renewable Energy Mix



## Mid-Term Enhancements to SDG&E System

- 2012/2013 CAISO Transmission Planning Process - Approved transmission projects:
  - New 230 kV Line from Sycamore to Penasquitos Substation (2017)
  - Additional dynamic reactive capability
    - SONGS Mesa\* - Static Var Compensator (2015)
      - Investigating future use as DC Terminal
    - Talega Substation - Synchronous Condenser (2015)
- 300 MW of New Local Capacity need approval (2018)
  - Looking at options with developer to get plant built as soon as 2015

**To maintain a reliable system, a portfolio of generation and transmission infrastructure and voltage support equipment, is needed: ONE SIZE DOES NOT FIT ALL.**

**\*Provides benefits to both systems, CAISO determined SDG&E should construct and operate.**



# Impact of Generation and GHG

- Current Situation
  - Producing more power from our existing fleet of highly efficient natural gas power plants.
  - Capacity Factors up significantly since SONGS shutdown operating at efficient levels – less stops and starts
  - SDG&E fleet is more modern and efficient than most other natural gas assets
- Future – mitigating factors
  - Renewables
    - SDG&E's RPS resource commitments exceed CPUC requirements – Over 1,000 MW of new renewable resources coming on line between now and the end of 2014
    - SDG&E's rooftop solar connections now at 184 MW – approx. 50 MW more than forecasted for this year
  - Fossil Resources
    - GHG associated with the loss of SONGs energy will be partially offset by SDG&E's coal resources expiring at the end of 2013.
    - As new natural gas generation is added, overall resource efficiency will continue to improve.



# Summary

- Must be prepared for the challenges caused by SONGS being permanently retired, and plan accordingly
- SDG&E should be able to meet summer load without SONGS, but remains at risk of rotating outages under contingency conditions
- We need to build new infrastructure to compensate for SONGS retirement. Delay or roadblocks to necessary investments could potentially increase the risk of rotating outages
- It is even more crucial that customers be made aware of the need to conserve during warm days
- Ethnic and minority outreach through Community Based Organizations is critical to ensure conservation messages are communicated to all customers