

California ISO Summer Readiness Overview

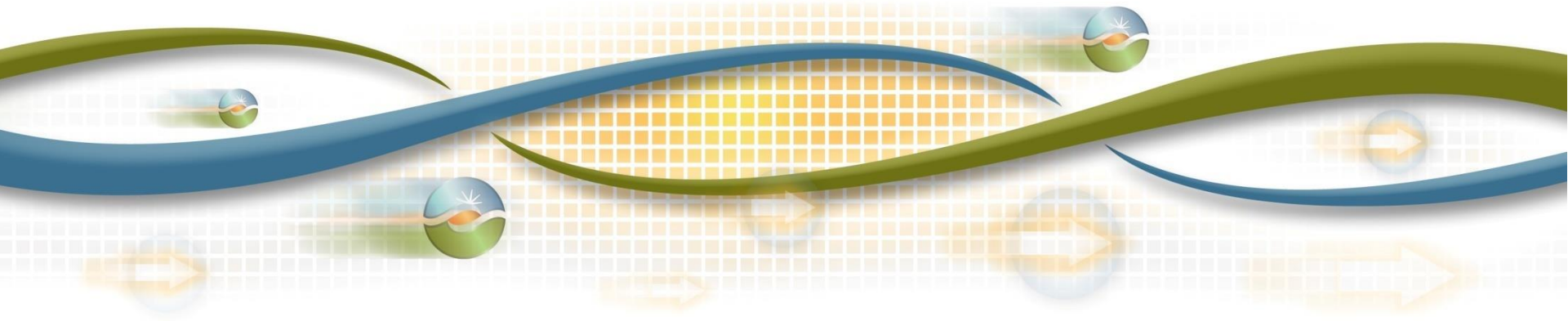
Rod Wheeler

Operations Policy

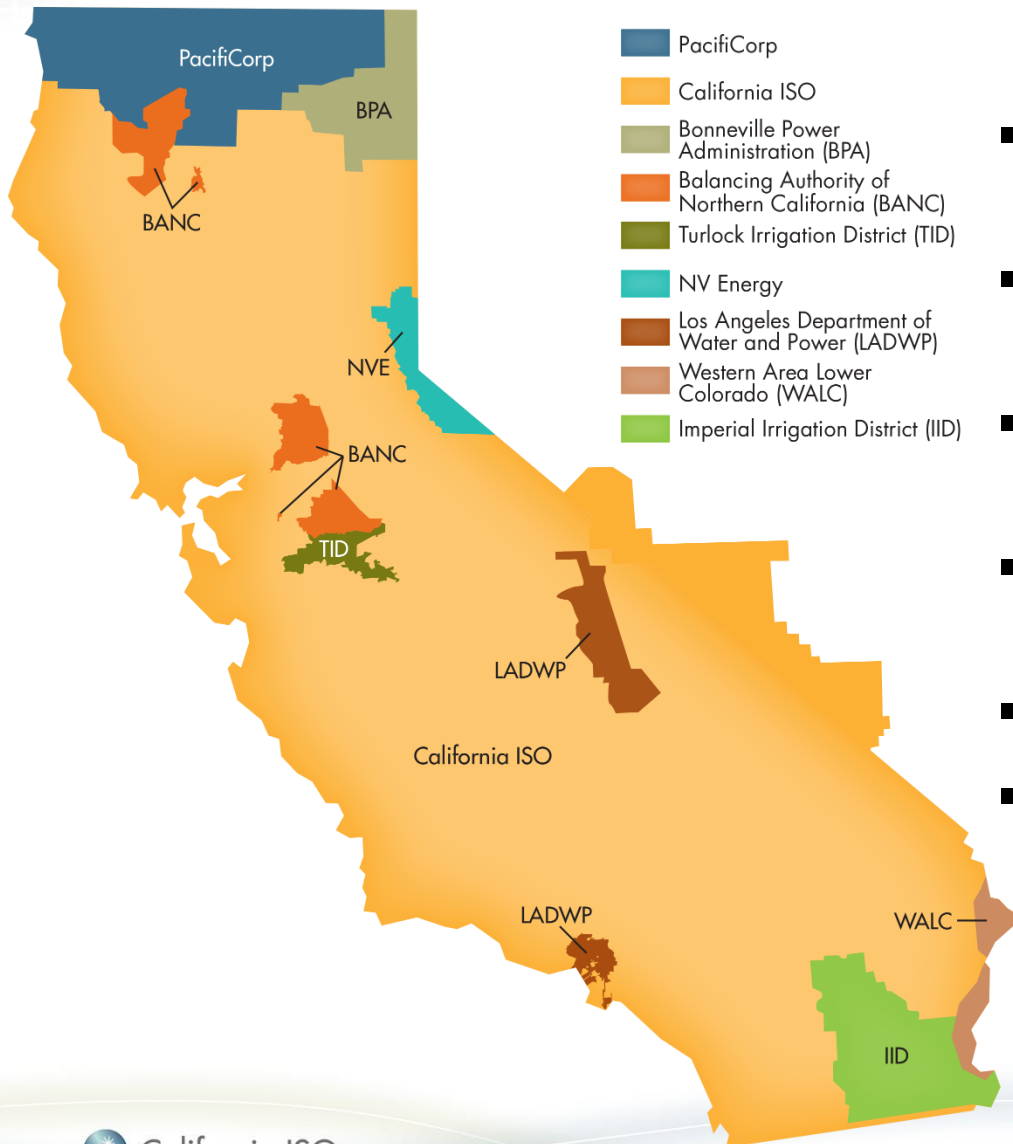
Regional Operations Initiatives

California ISO

June, 16 2016



California ISO by the numbers

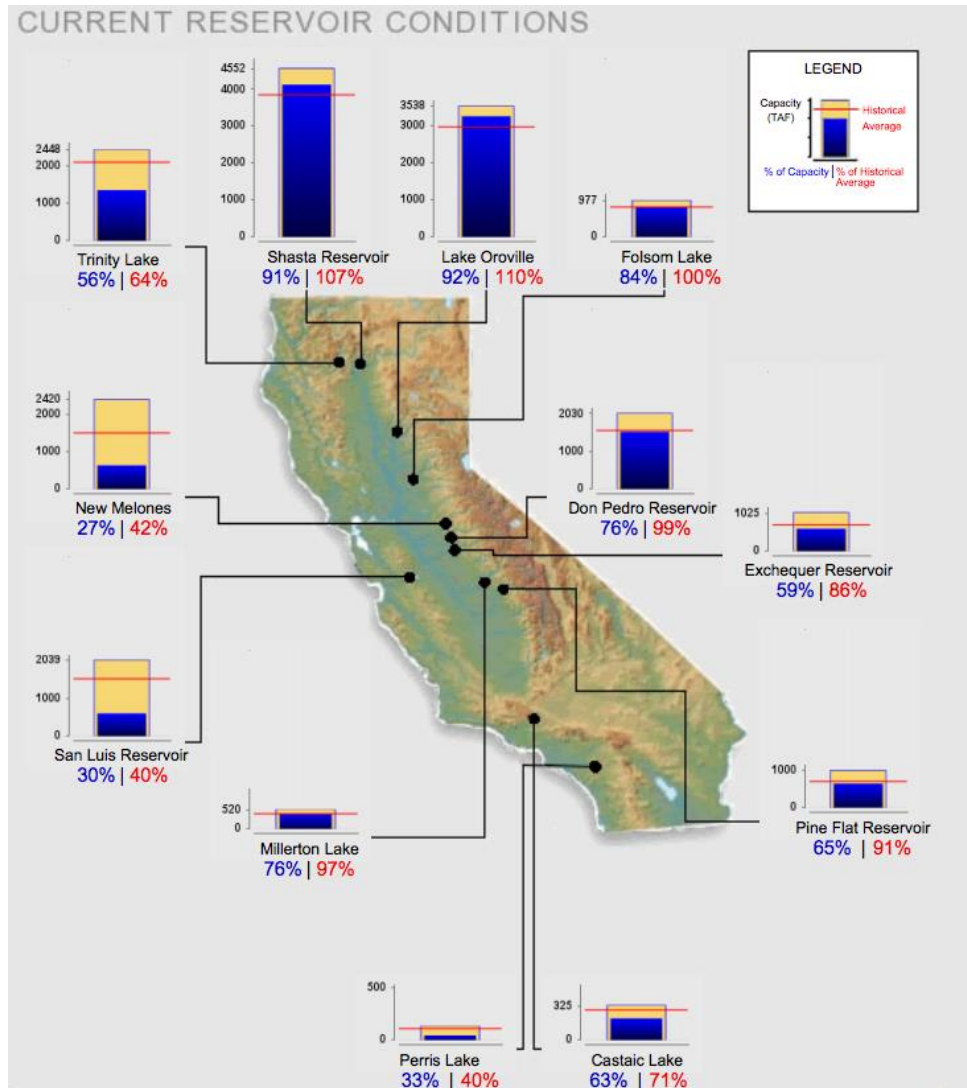


- **68,200** MW of power plant capacity (net dependable capacity)
- **50,270** MW record peak demand (July 24, 2006)
- **27,500** market transactions per day
- **26,000** circuit-miles of transmission lines
- **30 million** people served
- **240 million** megawatt-hours of electricity delivered annually

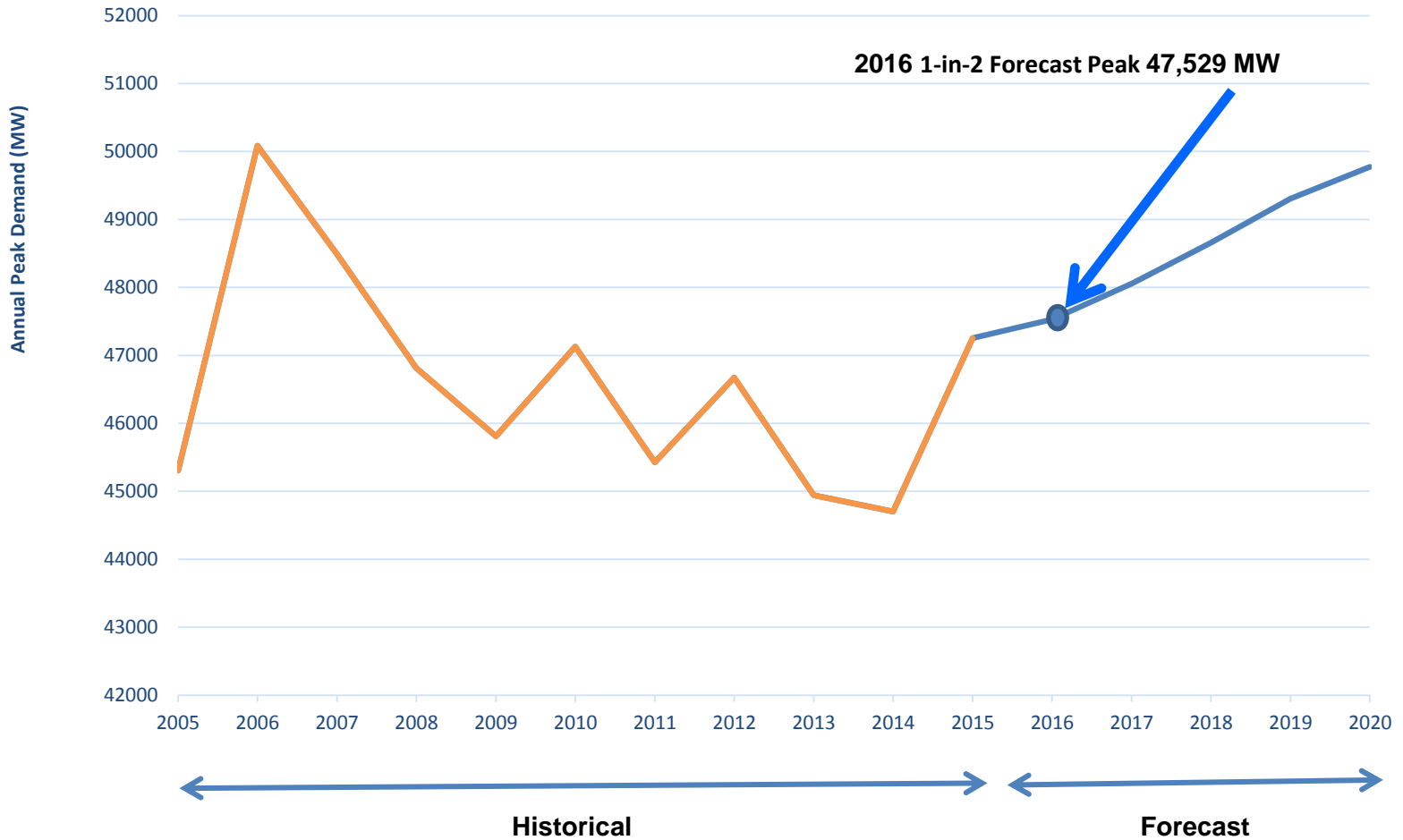
California ISO Summer Outlook

- We anticipate sufficient resource availability for our summer operating season.
 - June through September we limit system maintenance to maximize resource availability.
- We are expecting near normal hydro conditions this year
 - Normal hydro capacity is 7000 to 8000 MW
- Normal imports expected to remain available
 - Average California imports 6000MW to 7000MW
- Current weather modeling is predicting above normal summer temperatures for the West and Southwest.

Current Levels of Reservoirs

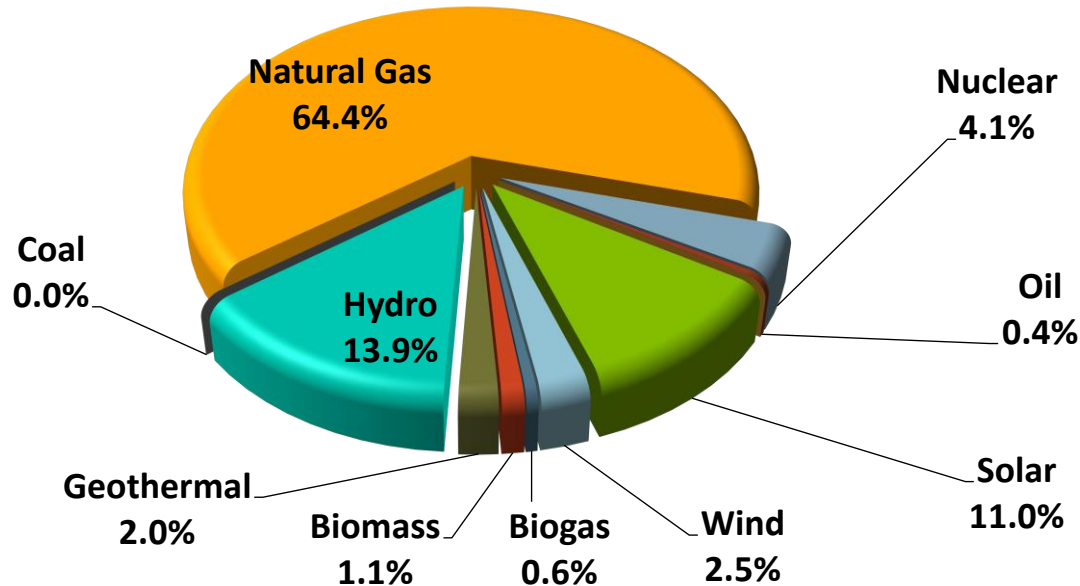


ISO System Peak Load Forecast



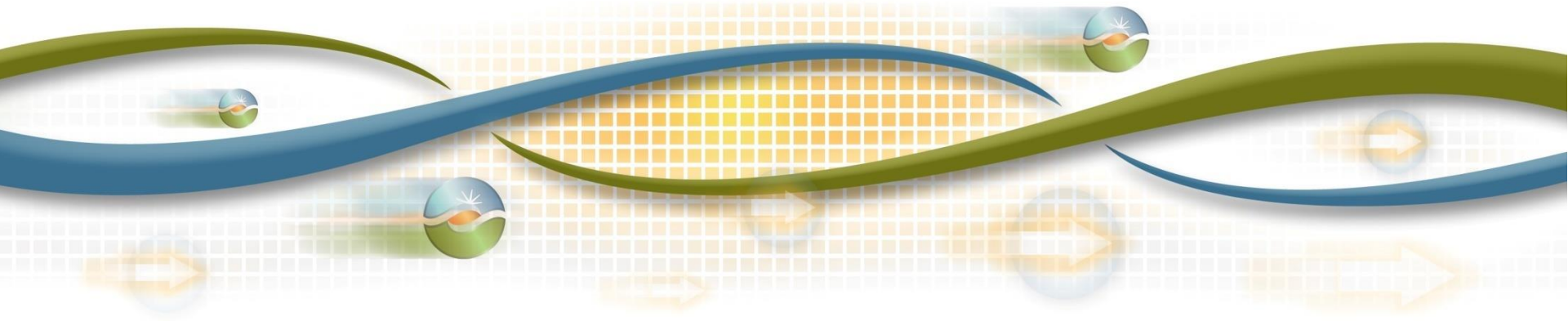
2016 Projected Available Generation is 54,459 MW

2016 ISO Summer On-Peak NQC by Fuel Type



From June 1, 2015, to June 1, 2016, additional 2,306 MW generation is expected to reach commercial operation while 355 MW of generation retired in SP26.

Aliso Canyon Gas Electric Coordination



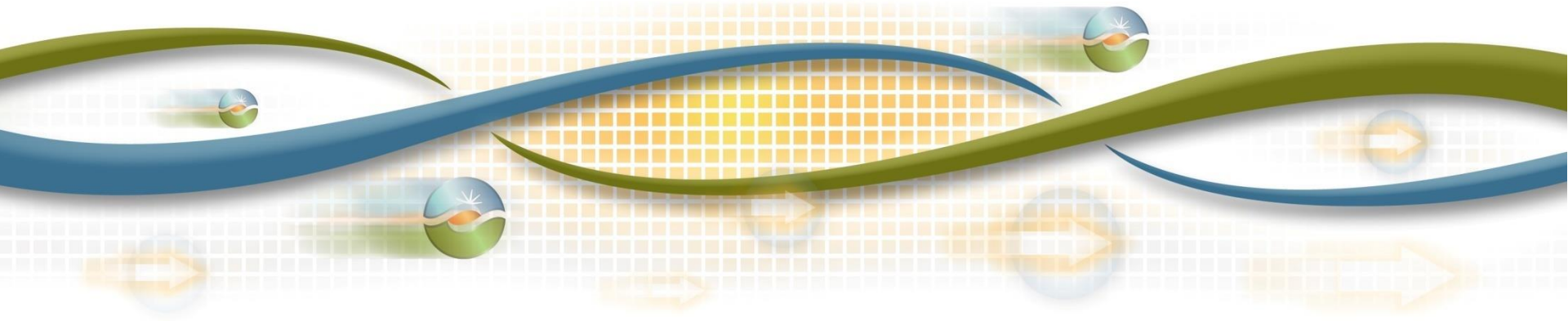


The Aliso Canyon storage facility has operated for decades as a critical part of the So Cal Gas transmission system.

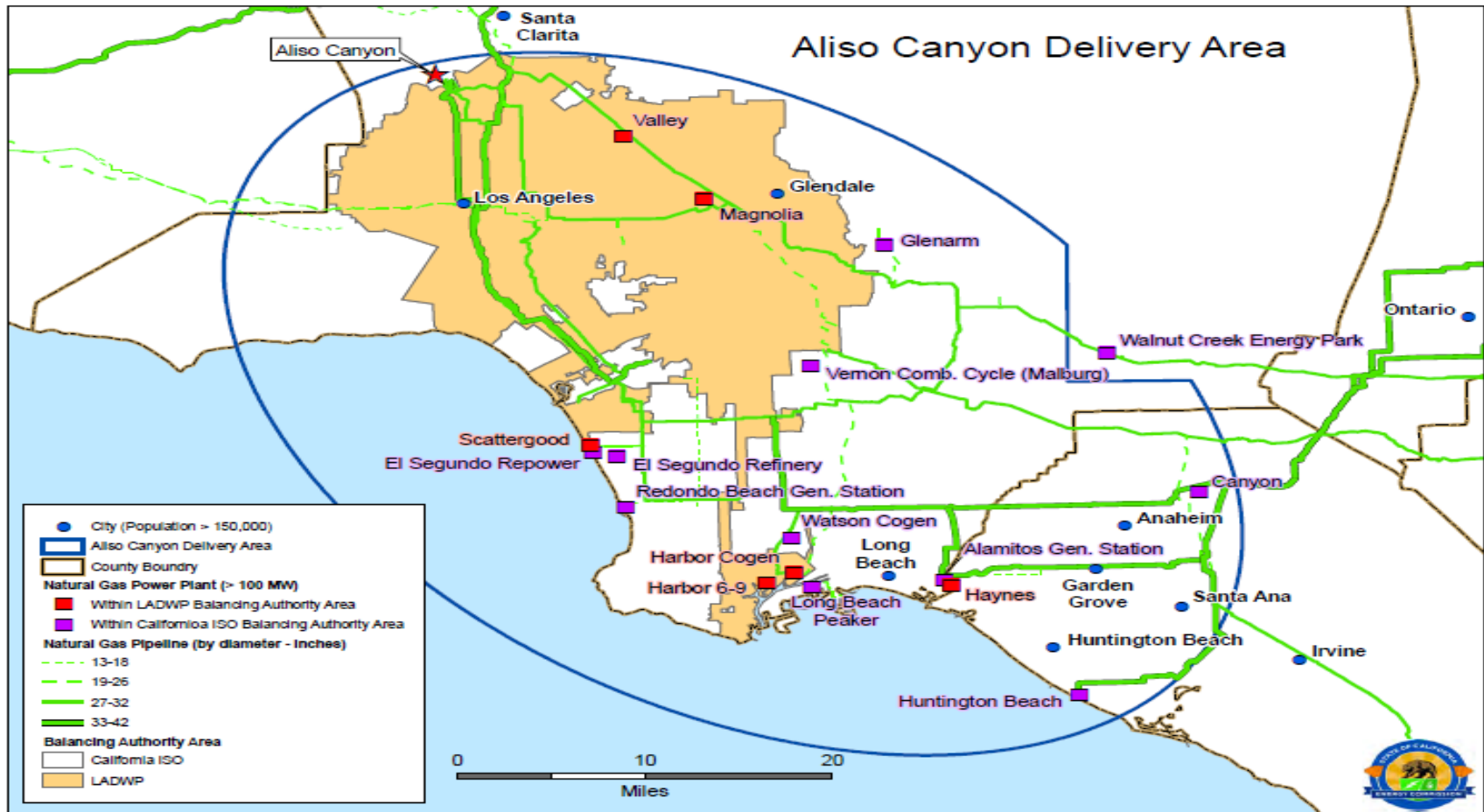
Aliso Canyon supplies fuel for natural gas-fired power plants that play a central role meeting regional electrical demand.

In both summer and winter, Aliso Canyon supports reliability when there are significant differences between gas supply and gas demand.

Restricting the use of Aliso Canyon during the summer operating season introduces concerns regarding energy reliability in the Greater Los Angeles area.



Aliso Canyon Supports ~9,800 MW of Electric Generation in the greater Los Angeles Area 40% LADWP/ 60% in CAISO



T:\Projects\Special Requests 2\Roger Johnson\AlisoCanyon\AlisoCanyon_AffectedCities_SelectPowerPlantsV2.mxd

Simulated Four Actual Operations Days

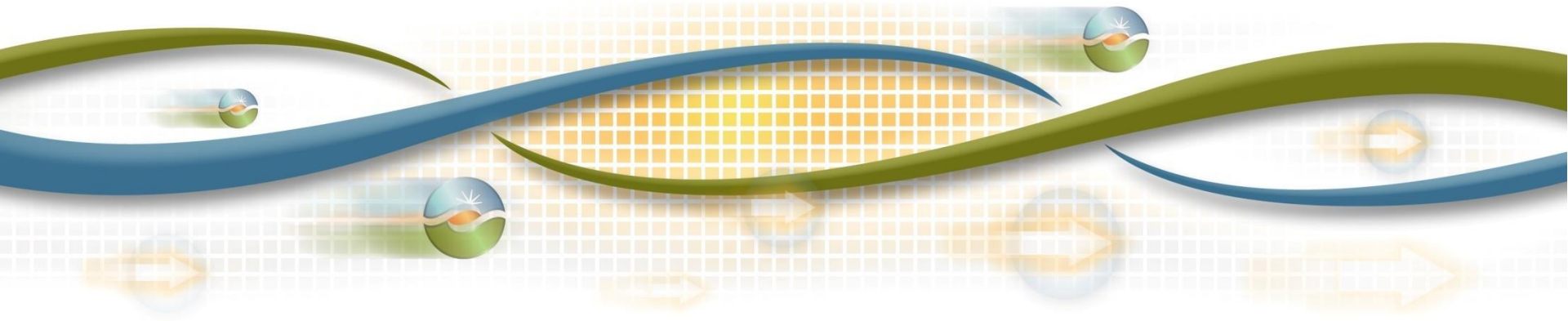
DATE	CONDITION	Actual Demand (Bcf per Day)
9/16/14	LADWP Peak Day	3.5
7/30/15	Large Electric Generation Ramp	3.2
9/9/15	CAISO – Large Difference between Day Ahead and Real Time actual + LADWP 2015 Peak	3.5
12/15/15	Winter Day and High Electric Generation	4.0

- Aliso Canyon considered unavailable
- Assumed no planned or unplanned gas system outages
- All other storage fields fully utilized during the simulations

Mitigation Measures Help, but Do Not Eliminate Risks

CATEGORY	MITIGATION MEASURE
Prudent Aliso Canyon Use	• Safely Make Available 15 Bcf Stored At Aliso Canyon to Prevent Summer Electricity Interruptions
	• Efficiently Complete the Required Safety Review at Aliso Canyon to Allow Safe Use of the Field
Tariff Changes	• Implement Tighter Gas Balancing Rules
	• Modify Operational Flow Order Rule
	• Call Operational Flow Orders Sooner in Gas Day
Operational Coordination	• Increase Electric and Gas Operational Coordination, both for forecasts and maintenance work
	• Determine if Any Gas and Electric Maintenance Tasks Can be Safely Deferred
LADWP Operational Flexibility	• Curtail Physical Gas Hedging
	• Stop Economic Dispatch
	• Curtail Block Energy and Capacity Sales
Reduce Natural Gas and Electricity Use	• Ask customers to Reduce Natural Gas and Electricity Energy Consumption through flex alerts
	• Expand Gas and Electric Efficiency Programs Targeted at Low Income Customers
	• Expand Demand Response Programs that Target Air Conditioning and Large Commercial Use
	• Reprioritize Existing Energy Efficiency Towards Projects with Potential to Impact Usage
	• Reprioritize Solar Thermal Program Spending to Fund Projects for Summer and by end of 2017

Questions?



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Today's Outlook Thu Feb 13 15:10:05 2014
Current Demand: **26,776 MW** Forecast Peak: **29,208 MW**



Currently there are no active Flex Alerts. Learn more...

[Supply & Demand](#) [Renewables](#) [Alerts, Warnings & Emergencies](#) [Flex Alerts](#) [Notify me](#)

Calendar News Releases Recent Documents Market Notices

Date	Time	Event	Agenda	Documents
THURSDAY, 02/13/2014				
iCal	12:00 AM - 11:59 PM	Full Network Model Update DB68		Documents
iCal	10:00 AM - 12:00 PM	Interconnection Process Enhancements Topics 4, 5 & 13	Agenda	Documents
iCal	12:30 PM - 4:30 PM	Flexible Resource Adequacy Criteria Must Offer Obligation	Agenda	Documents
iCal	1:00 PM - 2:30 PM	Spring 2014 Release Market Simulation	Agenda	Documents
MONDAY, 02/17/2014				
iCal	12:00 AM - 11:59 PM	Presidents' Day (Holiday Observed)		
TUESDAY, 02/18/2014				
iCal	12:00 AM - 11:59 PM	Comments - Reliability Services Issue Paper		Documents
iCal	10:00 AM - 11:00 AM	Release User Group		Documents

STAY INFORMED RELATED WEBSITES STAY CONNECTED



- Supply and Demand
- Renewables
- Net Demand
- Alerts, Warnings and Emergencies
- Flex Alerts

Today's Outlook

Get an at-a-glance view of supply and demand, renewable energy production, emergency notifications and requests for energy conservation. These displays are provided for information only and do not represent real-time system operating conditions.

[Click here](#) for more information about this page.



Supply and Demand

Graph displays current system demand plotted against forecast demand and available resources. See [tutorial](#) for more information on this graph.

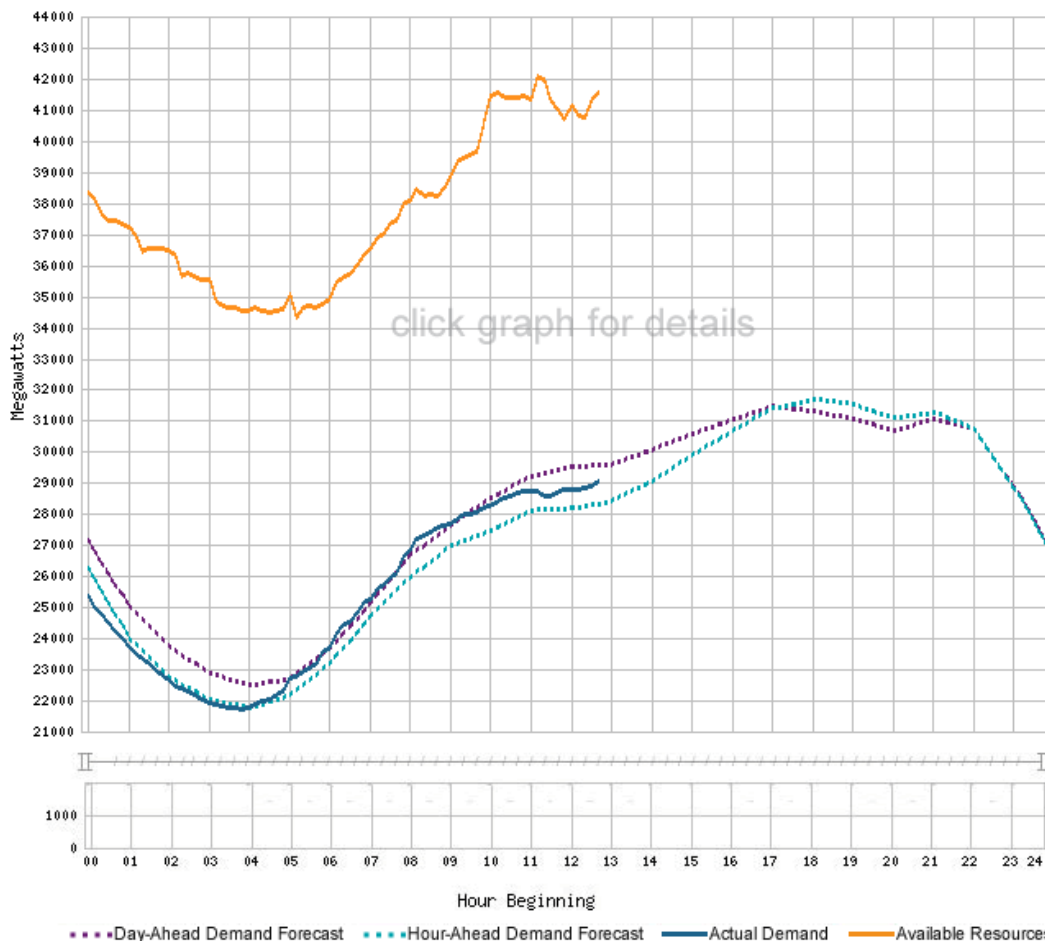
Current System Demand:
(Actual Demand at this point in time)
29029 MW

Today's Peak Demand:
(Highest point thus far today)
29029 MW

Today's Forecast Peak Demand:
(Highest point expected today. Does not appear post-peak.)
31662 MW

Tomorrow's Forecast Peak Demand:
(Not included on graph)
28818 MW

Information is current as of 10-Jun-2016 12:40 . If browser does not support auto refresh, select reload.



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Renewables

Graph shows aggregated output from renewables connected to the ISO grid.

Current Renewables

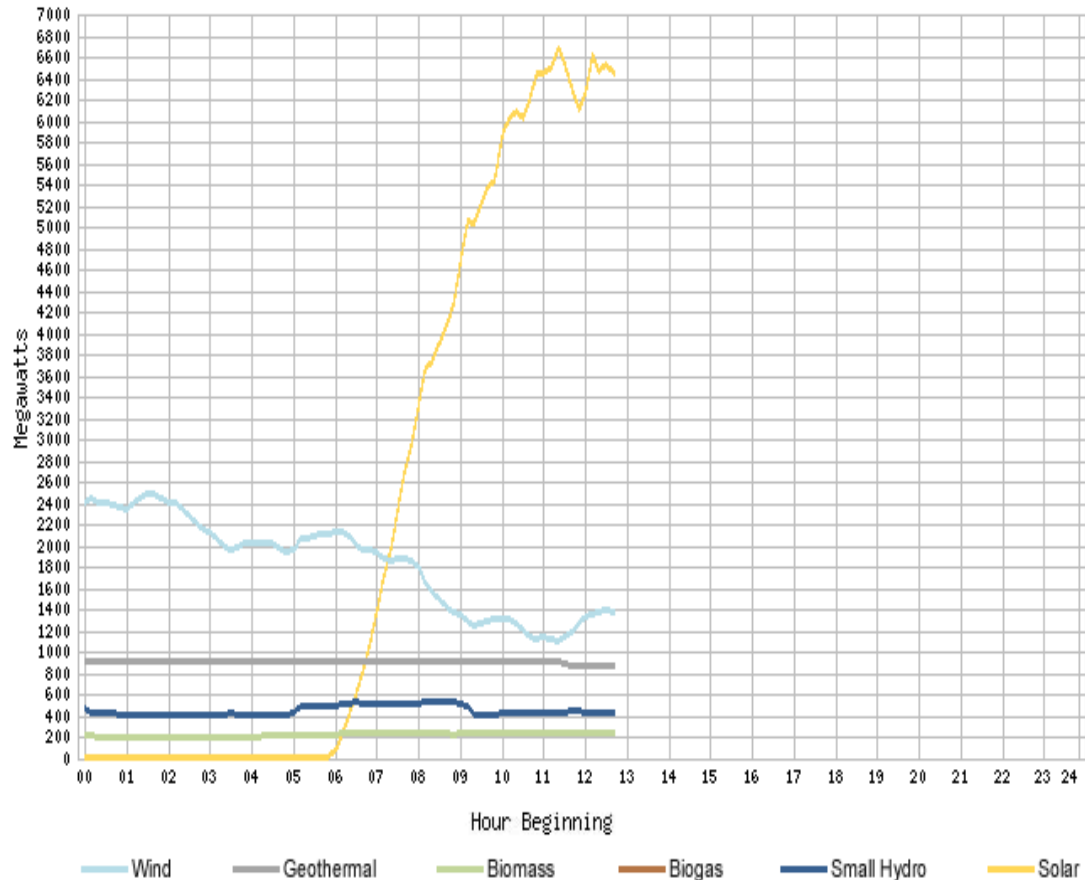
9532 MW

Current Solar: 6433 MW

Current Wind: 1375 MW



The Renewables Watch provides actual renewable energy production within the ISO Grid. [Click here to view yesterday's output.](#)



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Active Alerts, Warnings and Emergencies

This table reflects the status of active emergency notices issued when operating reserves or transmission capacity limitations threaten our ability to safely and reliably operate the grid.

AWE Stages	Northern California	Southern California	VEA Region
Stage 3 Emergency			
1 Hour Notification of Probable Load Interruption			
Stage 2 Emergency			
Stage 1 Emergency			
Warning			
Alert			
Flex Alert			
Restricted Maintenance Operations			
Transmission Emergency			

Quick links

- [Alert, warning and emergency notice log](#)
- [Emergency fact sheet](#)
- [Alerts, warnings & emergency history - 1998 to present](#)
- [ISO annual peak load history - 1998 through 2014](#)
- [Sign up for alert, warning and emergency notices](#)

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Flex Alerts



A Flex Alert is an urgent call to cut back on electricity and shift demand to off-peak hours (typically after 9 p.m.). As part of an educational and emergency alert program, Flex Alerts inform consumers about how and when to conserve electricity. This conservation is critical during heat waves and other challenging grid conditions, including wildfires or when major power plant or power lines are unavailable. Go to the [Flex Alert tips](#) page for more information on how you can help.

Flex Meter - system wide conservation requested

As the Alerts, Warnings & Emergency status increases the need for conservation will rise.



Quick links

- [Flex Alert messages and sign up form](#)
- [Flex Alert tips](#)
- [Flex Alert FAQs](#)
- [Emergency fact sheet](#)
- [Learn more at FlexAlerts.org](#)

Current Active Notice(s)

No Current Notice

Pending Notices

No Pending Notices