



California ISO
Shaping a Renewed Future

2011 Summer Loads & Resources Assessment

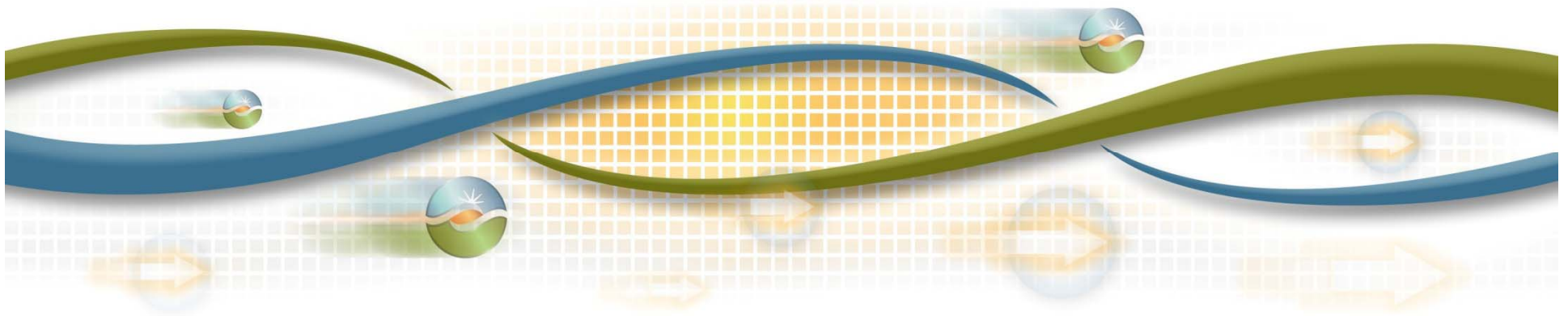
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General Session

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2011 Summer Assessment addresses:

➔ **Peak demands**

- Historical
- Forecasted

➔ **On-peak resources**

- Generation
- Imports
- Demand Response

➔ **Reserve margins**

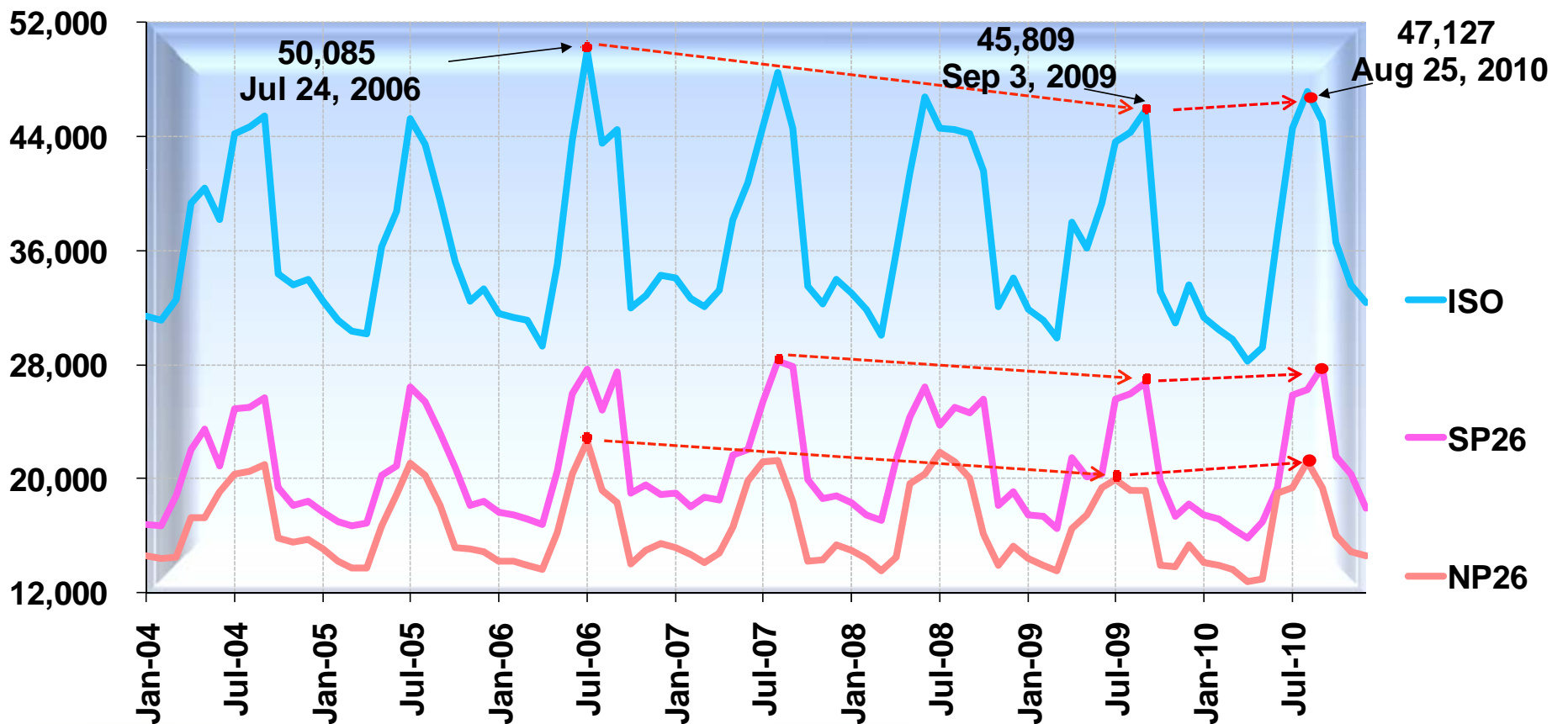
- Normal scenario reserve margins (1-in-2 deterministic)
- Extreme scenario reserve margins (1-in-10 deterministic)

➔ **Load shedding probabilities**

- Probabilistic scenarios

Historical ISO peak demand declined from 2007 to 2009, but trended upward in 2010 (2006 weather driven)

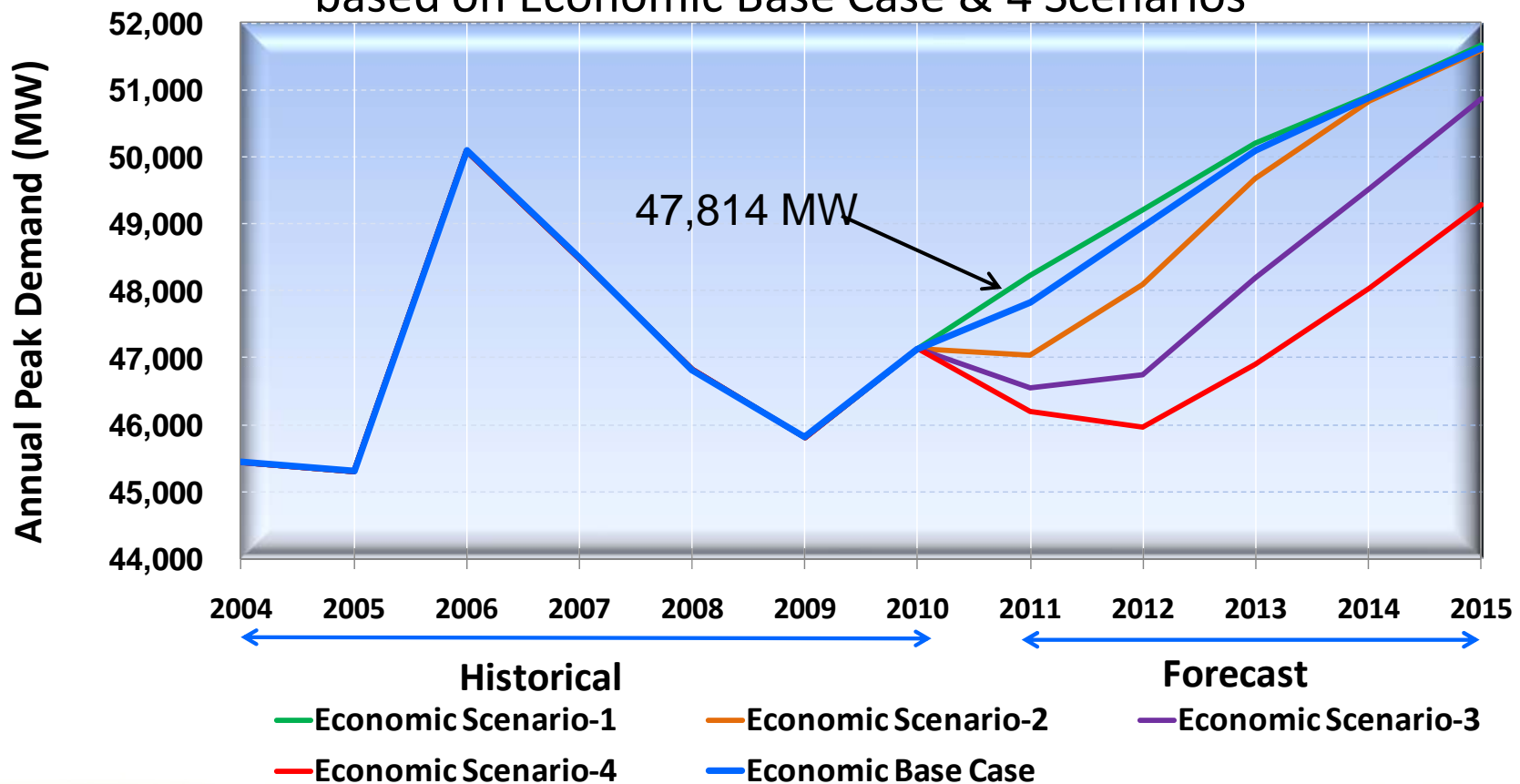
ISO, SP26 and NP26 Monthly Peak Demand (MW)



ISO 2011 1-in-2 peak demand forecast is 47,814 MW
 (based on forecast of GDP - base case scenario)

ISO 1-in-2 Peak Load Forecasts

based on Economic Base Case & 4 Scenarios



2011 Operating reserve margins are above CPUC's 15% reserve requirement under normal scenario

On-Peak Resources (MW)	ISO	SP26	NP26
• On-Peak Generation	49,599	23,809	25,790
• Outages (1-in-2)	(3,877)	(1,687)	(2,605)
• Imports (Moderate)	9,700	9,200	2,100
• Interruptible & DRs	2,357	1,655	702
Total Resources	57,779	32,977	25,987
Peak Demand (1-in-2)	47,814	28,184	21,360
Operating Reserve Margins	20.8%	17.0%	21.7%

Normal scenario: Moderate import, 1-in-2 Demand and Outage

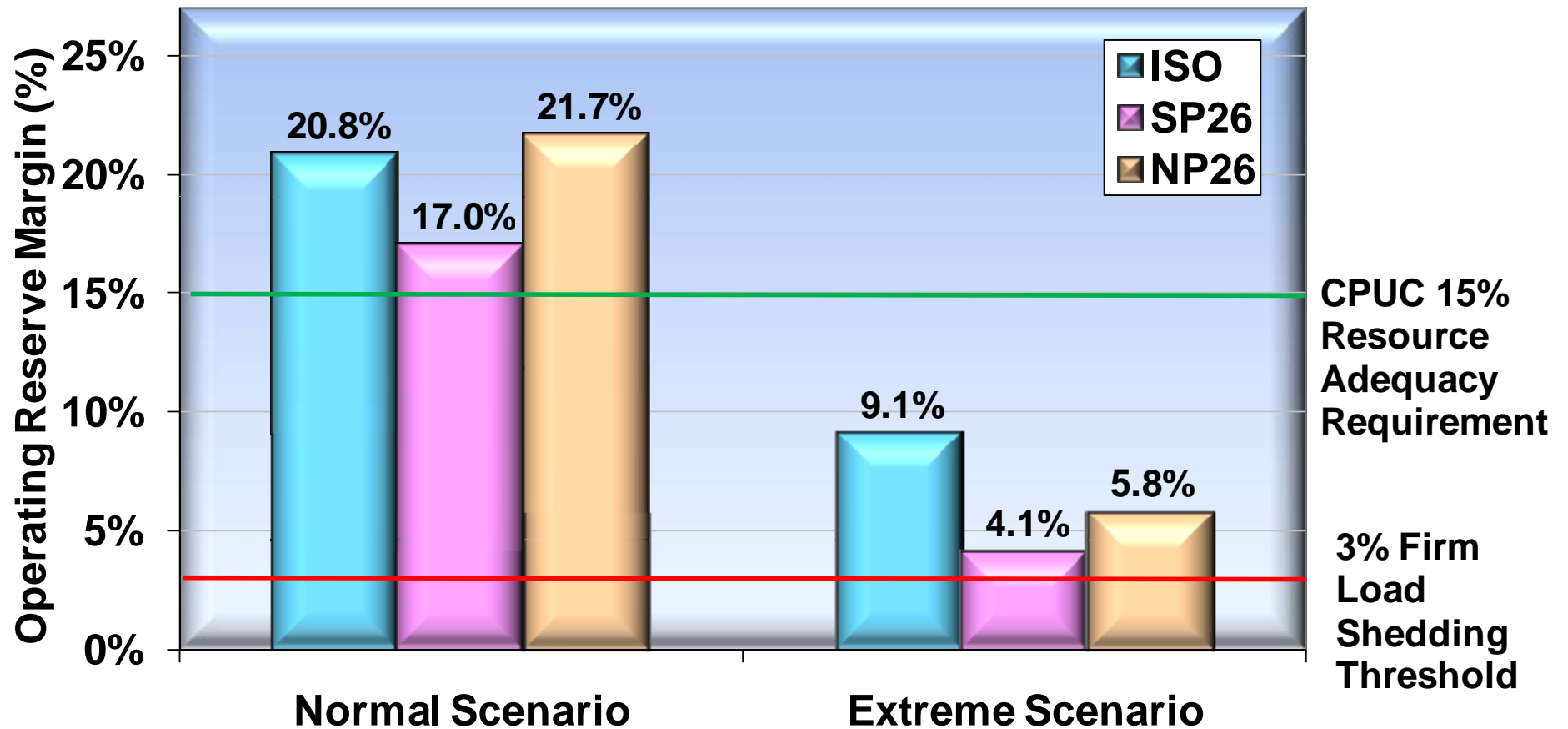
2011 Operating reserve margins are above
3% firm load shedding threshold
(under extreme scenario, a low probability event)

On-Peak Resources (MW)	ISO	SP26	NP26
• On-Peak Generation	49,599	23,809	25,790
• Outages (1-in-10)	(5,454)	(2,685)	(3,431)
• Imports (Low)	8,500	8,700	1,100
• Interruptible & DRs	2,357	1,655	702
Total Resources	55,002	31,479	24,161
Peak Demand (1-in-10)	50,428	30,246	22,837
Operating Reserve Margins	9.1%	4.1%	5.8%

>3%

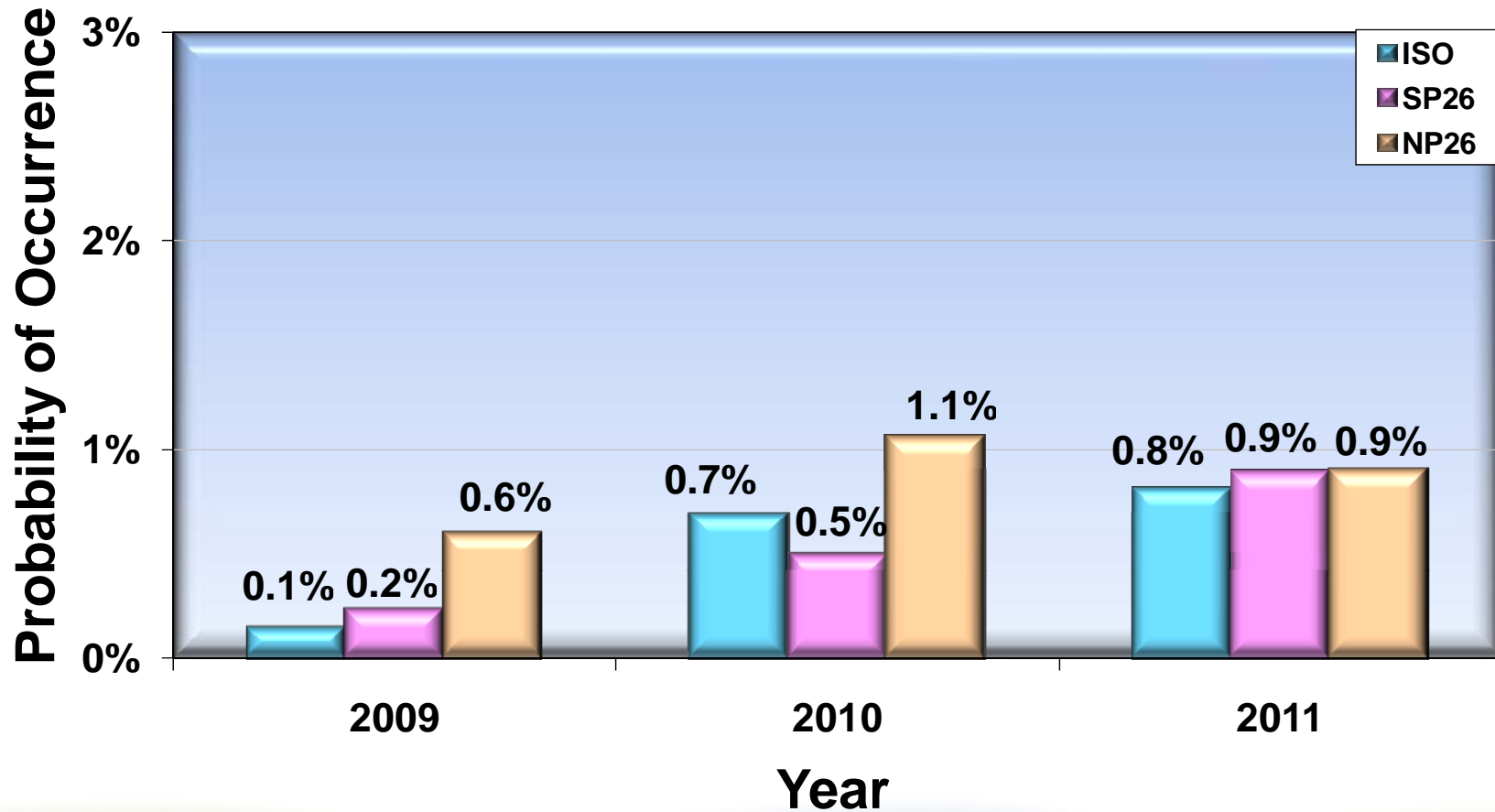
Extreme Scenario: Low import, 1-in-10 Demand and Outage

Operating reserve margins are >15% under normal scenario and >3% under extreme scenario



Probabilities of firm load curtailment have been ~1% or less since 2009

Probabilities of 3% or less Operating Reserve Margin



Conclusion: Supply is adequate to meet demand for summer 2011

- **Modest recovery of peak demand loads**
- **On-peak resource capacity has increased**
 - Snowpack higher than normal
 - 1,180 MW net generation additions
- **Able to serve load under 1-in-10 conditions**
- **Probability for firm load shedding less than 1%**

The ISO has completed its 2011 annual operation preparedness process

- Presented summer assessment results to the market participants.
- Trained its grid operators for system events, operating procedures and utility practices
- Coordinated with WECC, Cal Fire, gas companies, neighboring balancing authorities and relevant state agencies
- Reviewed results with CEC as part of ISO/CEC ongoing commitment to coordinate supply and demand assessments