



# Accounting for Existing Demand Side Impacts in the Annual Load Forecast Adjustment Process



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# Background R.04-04-003

- D.05-10-042 - addressed the quantification of EE, DR and DG impacts and the allocation of those impacts (phase II workshop report)
  - Adopted the recommendations established in a working group paper titled “The Phase 2 Resource Adequacy Report on the Quantification and Allocation of Energy Efficiency and Demand Response Programs Prepared by the Topic 3/4 Working Group”
  - Addressed the responsibility to quantify DR, EE, and DG effects





# Background (cont.) D.05-10-042

- In order for the CEC to determine what level of EE, DR, and DG impacts should be used to adjust an LSE's preliminary load forecast, LSEs must document any such impacts it believes are already included in the preliminary load forecast and provide a methodological rationale supporting this belief.
  - “There is a need for the three IOUs to prepare and document the hourly impacts of EE, DR and DG programs within their service areas and to provide these impacts to the CEC for use in the adjustment of LSE load forecasts.” (FF15)
  - It was noted that to the extent that the Commission assigns programmatic M&E activities for EE, DR, and DG to entities other than the IOUs, then these entities must also provide comparable impact products to the CEC.
- Process will be enhanced if, a month or more before the LSEs' respective historic and forecast load submittals are due, the CEC, in coordination with ED, issues instructions to each LSE regarding those submittals.





# Current Allocation of Demand Side Resource RA Value

Demand Side Resource Type	RA Benefit Allocated in the Load Forecast	RA Benefit Allocated through a Supply Side Credit	Need to Adjust Load to Not Double Count Benefits
Demand Response (DR)	Yes. Existing and Incremental Value of Load Modifying DR - only IOUs report (not consistent)	Yes. Existing and Incremental Value for Event Based DR	Yes
Energy Efficiency (EE)	Incremental value of EE (not consistent)	None currently (In the future LCR resources)	In the future (for LCR resources)
Distributed Generation (DG)	Incremental value of DG (not consistent)	None currently (In the future LCR resources)	In the future (for LCR resources)





# Year-Ahead Event Based DR Allocations

Table 2- 2017 Demand Response Allocations (MW)

Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17
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**SCE Service Area**

LA Basin  
 Big Creek-  
 Ventura  
 SCE Non-LCR  
 TOTAL

**SDG&E Service Area**

San Diego-IV  
 TOTAL

**PG&E Service Area**

Bay Area  
 Other PG&E  
 Areas  
 PGE Non-LCR  
 TOTAL





# Load Modifying DR

Element	Service Area	Jan-17	Feb-17	Mar-17	Apr-17
		1	2	3	4
Submitted LSE Forecast (Metered Load + T&D Losses + UFE)	SCE SDGE PGE Total				
Coincidence Adjustment	SCE SDGE PGE				
Coincident Peak Demand	SCE SDGE PGE				
CEC Coincident Peak Estimate for Comparison	SCE SDGE PGE				
CEC Adjustment for Plausibility/Migrating load	SCE SDGE PGE				
 EE/DG/DR Adjustment	SCE SDGE PGE				
Pro rata adjustment to match CEC forecast within 1%	SCE SDGE PGE				
<b>Final Load Forecast for RA Compliance</b>	SCE SDGE PG&E <b>Total</b>				





# Issue

- **Existing and incremental** demand side resource impacts are not being reported consistently to the CEC for use in year-ahead load forecast adjustment process
- This needs to be done to ensure equitable allocation of demand side resource benefits





# Proposal

- By March 15<sup>th</sup> of each year IOUs (and DER providers) send historical hourly demand side impacts for DR, DG and EE to LSEs (ESPs and CCAs) that serve load in the IOUs territory
- These same demand side impacts would have to be sent to the CEC for use in the annual load forecast adjustment process
- These load impacts would be included in year-ahead load forecast submission





# Parties Concerns (PG&E)

- Timing of the DR LIP report will create an issue
- Concern with developing consistent methodologies to measure and EE and DG impacts. “Modeling the impact of DG and EE requires a variety of assumptions about technology and region specific load shape”
- Proposes three changes to ED proposal
  - Filing date for reporting be moved out until April 1 instead of mid-March
  - Until there are vetted approaches for developing hourly DG and EE profiles the scope of reporting should be limited to DR
  - Schedule ED led workshops, with CEC involvement, to discuss methods for determining hourly DG and EE profiles





# Parties Concerns (SDG&E)

- No concern with providing EE and DG data for 2018 YA load forecast
- Concern with being able to provide hourly DR load impacts for 2018 YA load forecast (made in 2017)
  - SDG&E is not able to meet a March 22<sup>nd</sup> historical load forecast deadline
  - Existing contracts require 4 weeks to make changes and several more weeks to provide new reporting requirements by LSE
- SDG&E proposes to incorporate the new requirements into its ex-post year 2017 load impacts (made in 2018)
- SDG&E recommends that ED staff work with other IOUs to ensure consistent methodologies in developing ex-post EE load shapes





# Parties Concerns (SCE)

- Details have to be developed
- Recommends ED work closely with LSEs
- Confidentiality concerns
- Concern with the difficulty in obtaining DER performance data
- Concern with timeline of reporting
- Recommends utilizing data already available





# Year-Ahead Load Forecast Time Line Line 2017

IOUs Provide Demand Side Impacts to LSEs and CEC

March 15, 2017

June 2017 RA  
Decision on 2018  
RA Compliance

September 2017  
Final Allocations

March 17, 2017  
Historical 2016 Hourly  
Load Forecast Due

April 21, 2017  
Year-Ahead 2018  
Forecast Due

July 31, 2017  
Initial Year-Ahead  
Allocations

August 18, 2017  
Revised 2018  
Forecasts Due

April 1, 2017  
DR LIPs Due

July 1, 2017  
2018 DR Values  
Posted to Web





# Possible Implementation Slides





# Current Historical Hourly Load Template

- On Form 1: Each LSE reports hourly loads at the distribution for the prior calendar year.
  - ESPs and CCAs serving customers in more than one IOU service area (SA) must segregate these loads by IOU SA
  - IOUs report their hourly loads at the distribution level for bundled and unbundled customers. The estimated hourly impacts of demand response and interruptible events are also requested





# Current Historic Hourly Load Template

## FORM 1

LSE Name:      Company Name

### RECORDED LSE HOURLY LOADS

Report actual hourly demand by TAC area in calendar year 2015 in megawatts, for each hour of the day beginning with 1 a.m. on January 1, measured at the balancing authority load take-out point.

The time basis should be Pacific Standard Time (PST) throughout the entire year.

Date (PST)	Hour Ending (PST)	Recorded Demand of LSE/Bundled Customers at Take Out (MW)			System Load - IOUs only			
		PGE	SCE	SDGE	Total Direct Access Load	Other Loads (itemize as appropriate)	Estimated Impact of Demand Response Events	Total System Load
1-Jan-15	1							
1-Jan-15	2							
1-Jan-15	3							
1-Jan-15	4							





- RA template: RA Historic Data Request for use by LSEs to report 2018 historic loads to the CEC
- Filing Instructions Form1: Recorded LSE Hourly Loads
  - ... The estimated hourly impacts of demand response, **energy efficiency, distribution generation**, and interruptible events are also requested.

		Recorded Demand of LSE/Bundled Customers at Take Out (MW)			System Load - IOUs only		PGE			SCE			SDGE			
Date (PST)	Hour Ending (PST)	PGE	SCE	SDGE	Total Direct Access Load	Other Loads (itemize as appropriate)	Estimated Impact of Demand Response Events	Estimated Impact of Energy Efficiency Events	Estimated Impact of Distribution Generation Events	Estimated Impact of Demand Response Events	Estimated Impact of Energy Efficiency Events	Estimated Impact of Distribution Generation Events	Estimated Impact of Demand Response Events	Estimated Impact of Energy Efficiency Events	Estimated Impact of Distribution Generation Events	Total System Load
1-Jan-16	1															
1-Jan-16	2															
1-Jan-16	3															





# Year-Ahead Load Forecast Template

- Form 1: Each LSE reports their best estimate of expected monthly peak loads, disaggregated by sector, and including distribution losses. For IOUs, only a bundled customer forecast is requested on Form 1.
- Form 3: (Only for IOUs) IOU Service Area Forecasts and Demand-Side Program Adjustments
  - IOUs report the SA forecast associated with the bundled peak load forecast on Form 1. They are also to report on any demand-side program adjustments incorporated in the submitted forecast, specifically incremental effects of programs. This data is requested by customer type (DA, CCA) and general program category (EE, DG, load modifying DR)





# Year-Ahead Load Forecast Form 3

						Incremental effects of 2014/2015 Demand side programs included in monthly peak demand forecast (MW) *													
Distribution Service Area Forecast (MW)						Customer-side distributed generation (CSI/SGIP)					Energy Efficiency Programs				Nondispatchable demand response				
	Bundled Peak forecast	Direct Access	CCA	Other Departing Load	Total	Bundled	Direct Access	CCA	Other Departing Load	Service Area Effects with Losses	Bundled	Direct Access	CCA	Other Departing Load	Bundled	Direct Access	CCA	Other Departing Load	
Jan-16																			
Feb-16																			
Mar-16																			





- RA template: 2018 CPUC jurisdictional LSE load forecast
- Filing Instructions Form 4 Service Area Forecasts and Demand-side Program Adjustments:

■ .		
	Distribution Service Area Forecast (MW)	
	Peak forecast	Total
Jan-17		
Feb-17		
Mar-17		
Apr-17		
May-17		
Jun-17		

Incremental effects of 2015/2016 Demand side programs included in monthly peak demand forecast (MW) *		
Customer-side distributed generation (CSI/SGIP)	Energy Efficiency Programs	Nondispatchable demand response
Service Area	Service Area	Service Area

