

# California Demand Response Programs

It's an exciting time to be an energy-consuming organization in California. That's because we're on the cusp of a new era in clean energy. Our drive toward generating 100% of our state's energy by way of renewable sources by the middle of this century is one no other state can match.

Getting there won't be easy, but the road of a pioneer seldom is.

That's why CPower wants to help your organization lead California toward a more sustainable future with a holistic demand-side management solution

## California Programs

- Capacity Bidding Program (CBP)
- Base Interruptible Program (BIP)
- Resource Adequacy (RA)
- Emergency Load Reduction Program (ELRP)
- Demand Side Grid Support (DSGS) Option 2



# Program Comparison

Parameters	PG&E BIP	PG&E CBP Elect	SCE RA	SCE CBP	SDG&E CBP Elect	Statewide ELRP	DSGS Option 2
Dispatch	Day Of (30 or 15 min)	Day Ahead	Day Ahead with possibility for 45 minute	Day Ahead	Day Of (40 min)/ Day Ahead	Day Of	Real Time
Commitment period	Annual (Jan-Dec)	Summer (May-Oct)	Summer (May-Oct)	Summer (Jan-Dec)	Summer (May-Oct)	Summer (May-Oct)	Summer (May-Oct)
Commitment Hours	24/7/365	1-9 PM Mon-Sat	4-9 PM weekdays 4-9PM Saturdays	May: 5-10 PM Mon-Sat June-Sept: 4-9 PM Mon-Sat Oct: 4-9 PM Mon-Fri	1-9 PM Mon-Sat	4-9 PM Daily	4-9 PM Daily
Max # of events/Day	1	1	1	1	1	1	None
Callable Hours/Events	Maximum 6 hours	1-4 hours	1-4 hours	1-5 hours	2-4 hours	5	1-6 hours
Min Curtailment Value	100kW	No	No	No	20 kW	No	No
On-Site Generation Requirements	No Fossil	No Fossil	No Fossil	No Fossil	No Fossil	Fossil Permitted	No Fossil
Payment Bands	Below 100% excess energy applies	75-105% Proportional Below 75% reduced payments /penalties	Pay for Performance  No penalties	75-105% Proportional Below 75% reduced payments /penalties	75-100% Proportional Below 75% reduced payments /penalties	Pay for Performance No penalties.	Pay for performance No penalties.
Trigger	System Alert or Emergency	Economic bid into CAISO	Economic Bid into CAISO	Market price trigger	Market price trigger/ Economic bid into CAISO	System Alert or Emergency	Economic bid into CAISO
Max hours (events) / Month	40 hours	5 Events	24 hours	30 hours (6 events)	24 hours	60	None
Max Hours / Year	180 hours	120 hours	None	None	144 hours	60	None
# Test / Year	Up to 2	Up to 1 per month	Up to 1 in June, Aug., and Oct.	Up to 1 per month	Up to 1 per month	N/A	Must have one event per month

# Program Parameters CBP

<b>BASELINE</b>	<ul style="list-style-type: none"><li>▪ For weekdays, the average usage of each hourly interval out of 10 previous eligible weekdays. For weekends and holidays, the average usage of each hourly interval out of 4 previous eligible weekdays. Customer can choose baseline with or without day-of adjustment</li><li>▪ (60% to 140%) or without day-of adjustment.</li></ul>
<b>COMPENSATION</b>	<ul style="list-style-type: none"><li>▪ Payments for Capacity and Energy are based on monthly kW curtailment nomination, adjusted by performance.</li><li>▪ Energy payments are made only to bundled customers when either an event or test is called.</li></ul>
<b>COMPLIANCE</b>	<ul style="list-style-type: none"><li>▪ Customers are required to comply with all relevant rules and regulations.</li></ul>
<b>UNDER AND NON-PERFORMANCE</b>	<ul style="list-style-type: none"><li>▪ Payment is proportional to performance until performance reaches 75% of nomination, at which point payment is 50% of nomination until performance reach 60% where payment drops to 0% and penalties begin to accrue. Performance during emergency events is not included in the calculation of program performance.</li></ul>
<b>ENROLLMENT DEADLINE</b>	<ul style="list-style-type: none"><li>▪ Contract and add forms must be finalized by the 1st day of the month prior to the operating month. Actual deadline varies by utility.</li></ul>
<b>METERING</b>	<ul style="list-style-type: none"><li>▪ Each account must have an approved 15-minute interval meter or Smart Meter and approved meter communications equipment installed and operating at least 10 days prior to participating in the programs in order to establish a valid baseline. PG&amp;E requires 3 months of data.</li></ul>
<b>BACK-UP GENERATION</b>	<ul style="list-style-type: none"><li>▪ No fossil generation for curtailment. All customers will have to provide information on any onsite fossil generation and attest to not using it for curtailment. Verification measures under development by CPUC and supporting data, including the potential for a utility paid for data logger, will be requested.</li></ul>
<b>CPOWER APP REQUIREMENTS</b>	<ul style="list-style-type: none"><li>▪ If curtailable load per account is in excess of 500kW, the CPower App is required and CPower shares the cost with customer.</li></ul>

# Program Parameters PG&E BIP

<b>BASELINE</b>	<ul style="list-style-type: none"><li>▪ Summer Potential Load Reduction (PLR) is based upon the average monthly demand during On-Peak hours (on-peak kWh divided by on-peak hours) excluding any days where customers participated in a DR event.</li><li>▪ Winter Potential Load Reduction (PLR) is based upon the average monthly demand during assessment hours.</li><li>▪ Partial-Peak hours (partial-peak kWh divided by partial-peak hours) excluding any days where customers participated in a DR event.</li></ul>
<b>COMPENSATION</b>	<ul style="list-style-type: none"><li>▪ Capacity Payment: based upon the difference between the applicable Summer or Winter monthly PLR and the Firm Service Level.</li></ul>
<b>COMPLIANCE</b>	<ul style="list-style-type: none"><li>▪ Customers are required to comply with all relevant rules and regulations.</li></ul>
<b>UNDER AND NON-PERFORMANCE</b>	<ul style="list-style-type: none"><li>▪ Failure to reduce usage below FSL results in penalty payments back to PGE at a specified \$/kWh amount.</li><li>▪ Payments will be netted against customer payments to reduce risk of out-of-pocket expenditures.</li></ul>
<b>ENROLLMENT DEADLINE</b>	<ul style="list-style-type: none"><li>▪ New Enrollments are only processed in April, contracts must be finalized and add forms submitted by mid- March.</li><li>▪ De-enrollments and FSL changes may only occur in November for the following calendar year.</li></ul>
<b>METERING</b>	<ul style="list-style-type: none"><li>▪ Each account must have an approved 15-minute interval meter and approved meter communications equipment installed and operating at least 10 days prior to participating in the programs in order to establish a valid baseline.</li></ul>
<b>BACK-UP GENERATION</b>	<ul style="list-style-type: none"><li>▪ No fossil generation for curtailment. All customers will have to provide information on any onsite fossil generation and attest to not using it for curtailment. Verification measures under development by CPUC and supporting data, including the potential for a utility paid for data logger, will be requested.</li></ul>
<b>CPOWER APP REQUIREMENTS</b>	<ul style="list-style-type: none"><li>▪ If curtailable load per account is in excess of 500kW, the CPower App is required and CPower shares the cost with customer.</li></ul>

# Program Parameters RA

<b>BASELINE</b>	<ul style="list-style-type: none"><li>▪ Weekday events are calculated on the average usage of each hourly interval out of 10 previous eligible weekday with an uncapped day of adjustment to the baseline; Saturday events are calculated on the average of each hourly interval of the prior 10 eligible days, including weekend days, with an uncapped day of adjustment to the baseline.</li></ul>
<b>COMPENSATION</b>	<ul style="list-style-type: none"><li>▪ Capacity Payment: Monthly payment based on customer's monthly nominated kW or average performance in latest event/test. Prior performance carries forward if no event/test in the month.</li><li>▪ Energy payments are made based on actual performance when an event is called.</li></ul>
<b>COMPLIANCE</b>	<ul style="list-style-type: none"><li>▪ Customers are required to comply with all relevant rules and regulations.</li></ul>
<b>UNDER AND NON-PERFORMANCE</b>	<ul style="list-style-type: none"><li>▪ Pay for performance</li></ul>
<b>ENROLLMENT DEADLINE</b>	<ul style="list-style-type: none"><li>▪ Minimum 80 day prior to delivery month to meet CAISO registration timelines.</li></ul>
<b>METERING</b>	<ul style="list-style-type: none"><li>▪ Each account must have an approved 15-minute interval meter or Smart Meter and approved meter communications equipment installed and operating at least 10 days prior to participating in the programs in order to establish a valid baseline.</li></ul>
<b>BACK-UP GENERATION</b>	<ul style="list-style-type: none"><li>▪ No fossil generation for curtailment. All customers will have to provide information on any onsite fossil generation and attest to not using it for curtailment. Verification measures under development by CPUC and supporting data, including the potential for a utility paid for data logger, will be requested.</li></ul>
<b>DISPATCH REQUIREMENT</b>	<ul style="list-style-type: none"><li>▪ New for 2021, this program is required to provide "energy" via curtailment, this will require the program to be dispatched 35-40 hours per season</li></ul>
<b>CPOWER APP REQUIREMENTS</b>	<ul style="list-style-type: none"><li>▪ If curtailable load per account is in excess of 500kW, the CPower App is required and CPower shares the cost with customer.</li></ul>

# Program Parameters DSGS Option 2

<b>BASELINE</b>	<ul style="list-style-type: none"><li>▪ Weekday events are calculated on the average usage of each hourly interval out of 10 previous eligible weekday with an uncapped day of adjustment to the baseline; Weekend events are calculated on the average of each hourly interval of the prior 10 eligible days, including weekend days, with an uncapped day of adjustment to the baseline.</li></ul>
<b>COMPENSATION</b>	<ul style="list-style-type: none"><li>▪ Capacity and energy payments are made based on actual performance when an event is called.</li></ul>
<b>COMPLIANCE</b>	<ul style="list-style-type: none"><li>▪ Customers are required to comply with all relevant rules and regulations.</li></ul>
<b>UNDER AND NON-PERFORMANCE</b>	<ul style="list-style-type: none"><li>▪ Pay for performance</li></ul>
<b>ENROLLMENT DEADLINE</b>	<ul style="list-style-type: none"><li>▪ Registration at least 41 business days prior to delivery month to meet CAISO registration timelines.</li></ul>
<b>METERING</b>	<ul style="list-style-type: none"><li>▪ Each account must have an approved 15-minute interval meter or Smart Meter and approved meter communications equipment installed and operating at least 10 days prior to participating in the programs in order to establish a valid baseline.</li></ul>
<b>BACK-UP GENERATION</b>	<ul style="list-style-type: none"><li>▪ No fossil generation for curtailment.</li></ul>
<b>DISPATCH REQUIREMENT</b>	<ul style="list-style-type: none"><li>▪ Resources are required to participate in the real-time market, which will entail an approximate 45-minute dispatch notification</li></ul>
<b>CPOWER APP REQUIREMENTS</b>	<ul style="list-style-type: none"><li>▪ If curtailable load per account is in excess of 500kW, the CPower App is required and CPower shares the cost with customer.</li></ul>

# Program Parameters ELRP

<b>ELIGIBILITY AND INCREMENTALITY</b>	<ul style="list-style-type: none"><li>• Customers may “stack” this program with capacity programs and be paid for incremental curtailments or use of fossil resources during ELRP events. There is no minimum dispatch in this scenario.</li><li>• Customer not dual enrolled in a capacity program will receive at least 10 hours of dispatch per season to ensure a revenue opportunity.</li></ul>
<b>BASELINE</b>	<ul style="list-style-type: none"><li>▪ Average usage of each hourly interval out of 10 previous eligible weekdays. Customer can choose baseline with or without day-of adjustment</li><li>▪ (60% to 140%) or without day-of adjustment.</li></ul>
<b>COMPENSATION</b>	<ul style="list-style-type: none"><li>▪ \$2000/MWH payment rate for event performance</li></ul>
<b>COMPLIANCE</b>	<ul style="list-style-type: none"><li>▪ Customers are required to comply with all relevant rules and regulations.</li></ul>
<b>UNDER AND NON-PERFORMANCE</b>	<ul style="list-style-type: none"><li>▪ None</li></ul>
<b>ENROLLMENT DEADLINE</b>	<ul style="list-style-type: none"><li>▪ Rolling monthly enrollment</li></ul>
<b>METERING</b>	<ul style="list-style-type: none"><li>▪ Each account must have an approved 15-minute interval meter or Smart Meter and approved meter communications equipment installed and operating at least 10 days prior to participating in the programs in order to establish a valid baseline. PG&amp;E requires 3 months of data.</li></ul>
<b>BACK-UP GENERATION</b>	<ul style="list-style-type: none"><li>▪ Approved fossil Generation may be used for curtailment. Customers will have to provide information on any onsite fossil generation used for participation.</li></ul>

# Performance Payment Bands

UTILITY PROGRAM	PERFORMANCE RANGE	PAYMENT TERMS
PG&E, SCE, and SDG&E CBP	75-105%	Proportional
	60-75%	50%
	<60%	0 payment plus Adjusted Hourly Capacity Penalty = Unadjusted Hourly Capacity Payment * (0.60 - Hourly Delivered Capacity Ratio)
RA	75-100% 0-75%	Proportional
ELRP	0-100%	Energy Payment provided for all kWh incremental to enrollment in any base capacity program
DSGS	0-100%	Proportional



# Average Event History

UTILITY	PROGRAM OPTIONS	AVERAGE EVENT HISTORY		
		Average of 2023 and 2018-2022 Average		
		Avg. # of Events	Avg. Hours Called	Avg. Hour/Event
SCE	CBP Day Of	24	98.75	4.1
	CBP Day Ahead	24.5	97.5	4
	RA	17	47.25	2.8
PG&E	Day Ahead Elect	8.5	18	2.1
	BIP	1.5	2.55	1.7
SDG&E	CBP Day Of Late Window	9	21.5	2.4
	CBP Day Ahead Late Window	10	21.5	2.2

# Pricing kW (per month) Gross

MONTH	Statewide ELRP	PG&E BIP	PG&E Elect	RA	SCE CBP	SDG&E CBP Elect		DSGS
			DA 1pm-9pm	DA	DA 1-5 HOURS	DA 1-9 PM	DO 1pm-9pm	
JANUARY	Energy payment only, no capacity minimum dispatch opportunity for stand alone enrollment	\$9.50 - \$14.80	-	-	-		-	-
FEBRUARY		\$9.50 - \$14.80	-	-	-		-	-
MARCH		\$9.50 - \$14.80	-	-	-		-	-
APRIL		\$9.50 - \$14.80	-	-	-		-	-
MAY		\$9.50 - \$14.80	\$5.64	\$11.70	\$4.59	\$3.60	\$4.06	\$11.70
JUNE		\$9.50 - \$14.80	\$6.44	\$12.09	\$6.89	\$9.59	\$10.82	\$12.09
JULY		\$9.50 - \$14.80	\$17.67	\$21.84	\$23.36	\$20.80	\$23.47	\$21.84
AUGUST		\$9.50 - \$14.80	\$23.83	\$23.40	\$27.19	\$25.71	\$29.01	\$23.40
SEPTEMBER		\$9.50 - \$14.80	\$14.92	\$24.96	\$14.54	\$17.03	\$19.22	\$24.96
OCTOBER		\$9.50 - \$14.80	\$7.79	\$13.65	\$2.69	\$5.16	\$5.82	\$13.65
NOVEMBER		\$9.50 - \$14.80	-	-	-		-	-
DECEMBER		\$9.50 - \$14.80	-	-	-		-	-
TOTAL (\$/kW/Yr)	\$2/kWh	\$114-\$177.6	\$76.27	\$107.64	\$79.26	\$81.89	\$92.40	\$107.64