



# **AUTOMATED DEMAND RESPONSE TECHNOLOGY INCENTIVES 2017 PROGRAM GUIDELINES**

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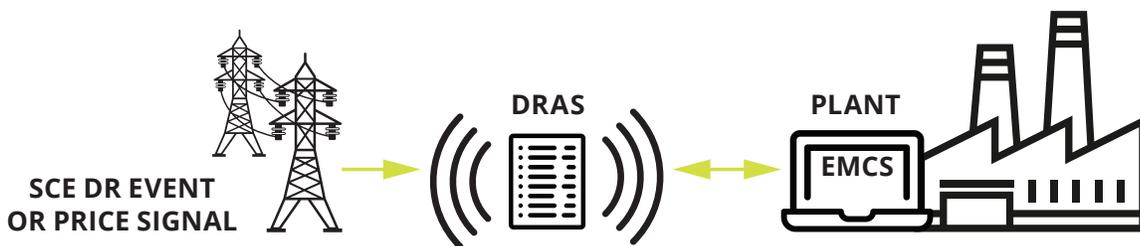


# 1. INTRODUCTION

These are the Program Guidelines for Southern California Edison's (SCE) Automated Demand Response (Auto-DR or ADR) Technology Incentives Program. It explains SCE policies, procedures, and requirements for our qualified customers; DR Program managers and service providers; equipment manufacturers; customer authorized agents; and internal project staff.

Auto-DR lets our Demand Response (DR) customers apply the load reduction strategies they choose automatically. So, there's no need for manual intervention. The program also offers Technology Incentives to non-residential customers. These incentives can offset the cost of installing qualifying energy management controls systems (EMCS — aka: building management systems). What does an EMCS do? It helps automate a facility's participation in DR events.

We have an array of DR Programs available. Our participating customers simply reduce energy use during peak demand periods. When they take part, they can earn financial incentives and other benefits. Participation in these programs can make an impact. They can improve the operation and reliability of California's electric system and help reduce greenhouse gas emissions.





## 2. AUTOMATED DEMAND RESPONSE (AUTO-DR) OVERVIEW

Auto-DR is an “enabling technology” incentive program. It pays up to 100% of installation costs for a qualifying EMCS. Auto-DR enables communication with the EMCS that responds to a DR event or signal and gets the reduction ball rolling — with no hands-on effort. For example, instead of having to manually reduce lighting or HVAC at a facility, Auto-DR sends a signal from a central server (known as the Demand Response Automation Server or DRAS) to the EMCS. That signal launches the customer’s pre-programmed load reduction strategy.

It automates every step needed to lower the facility’s electrical load by sending a signal via the OPENADR 2.0 National Communications Standard. This is a worldwide adopted Internet protocol that’s used to connect with DR-related equipment like EMCS. Our goal is to maximize the reliability and consistency of our DR Programs’ available kilowatt (kW) capacity. To do that, we make sure kW demand reductions during DR Events are realistic and achievable. Auto-DR is designed to make it easy for customers to participate consistently in as many DR Events as they want.

Depending on the DR Program, the enrolled customer is notified of an Event either one day before or on the day of the DR Event. When there is a DR Event, participants have three choices. They can do nothing and participate. They can choose to override their pre-programmed strategy and opt-out of the Event. Or they can change their load reduction strategy for that particular Event.

By automating reduction plans, Auto-DR makes it easy to participate. But it also gives customers the flexibility to alter their strategy or participation. We find this provides our customers and our team with more reliable, consistent results.

Auto-DR utilizes an open, interoperable, industry-standard control and communications technologies. These are designed to work with both common EMCS and individual end-use devices. Auto-DR’s technology and communications infrastructure originated from a conceptual design developed at Lawrence Berkeley National Laboratory (LBNL) in 2002.

Auto-DR's design is made up of two major elements built upon OpenADR (aka: an open-interface standards model). First, the Demand Response Automation Server (DRAS) sends Event notification signals to participating DR customers. Second, a customer's dedicated client device maintains constant communication with the DRAS and links to the facility's pre-programmed load reduction strategies. This happens independently of control network protocols, such as BACnet and Modbus.

Honeywell (formerly Akuacom) provides the communications infrastructure (DRAS) and connectivity support for SCE's Auto-DR participants. They also maintain compliance with the OpenADR 2.0 National Communication Standards.

If for any reason the automated load reduction signal fails to reach a customer's client device, customers are still responsible for load reduction obligations. Customers seeking Auto-DR Customized incentives are required to provide at least 30 kW reduction, which is verified in the two-hour Measurement and Verification (M&V) test (Section 3.11).

To receive Auto-DR Technology Incentives, enrollment in at least one of the Qualifying DR Programs or rates below is required:

- Real Time Pricing (RTP) - Tariff / Rate
- Critical Peak Pricing (CPP) - Tariff / Rate
- Demand Bidding Program (DBP) – Qualifying DR Program\*
- Aggregator Managed Portfolio (AMP, previously known as DRC) - Qualifying DR Program\*
- Capacity Bidding Program (CBP) - Qualifying DR Program
- Demand Response Auction Mechanism (DRAM) Pilot —Qualifying DR Program

Auto-DR Program case studies and fact sheets are available at [on.sce.com/autodr](http://on.sce.com/autodr)

For information on our DR Programs, please go to [sce.com/drps](http://sce.com/drps)

## 2.1 Business customers can choose from two types of Auto-DR Incentives

1. Incentives for the Auto-DR Customized Program are available to medium and large commercial customers who install or retrofit an EMCS. The incentives offered by the program are limited to \$200 per kW of verified load reduction, capped at 75% of total actual eligible project costs, whichever is less. Participants receive these incentives in two installments — 60% and 40% (see section 3.13). To qualify for Customized Technology Incentives, customers should have a minimum of 30kW load reduction, per eligible service account. We use the customer's summer specific baseline (CSSB) to determine the eligible available load (see Section 3.11.1 Calculating Load Shed from System Test).
2. The second choice is Auto-DR Express. This program uses predetermined (deemed) kW savings on standard lighting and HVAC technologies and measures. It applies to qualifying customers with a peak demand between 50 and 499 kW (see Section 3.12 for specific requirements). The Express Program incentives are limited to \$300 per kW, not to exceed 100% of total actual eligible project costs, whichever is less. Participants receive 100% of the approved incentive after equipment installation and validation. Express participants are not subject to the 60/40 incentive payment structure.

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\*SCE's DBP and AMP programs will be decommissioned by December 31, 2017 and will no longer be Qualifying DR Programs. Customers within their 36-month enrollment and participation requirement, as of 12/31/2017, may need to enroll into another Qualifying DR Program or rate.

### 2.1.1 Letter of Agreement for Customized Project Incentives of \$200,000 or more

Each service account seeking Auto-DR Customized incentives that is greater than or equal to \$200,000+ needs a Letter of Agreement (LOA), which is executed between SCE and the customer. If the customer elects to not enter into an LOA with us, funding for the service account will be capped at \$199,999. The LOA is a binding contract between the customer and SCE. In essence, we all agree to abide by additional contract provisions that aren't included in these Guidelines. If the Guidelines and LOA conflict, the LOA's terms and conditions will serve as the binding provisions. We'll send the LOA to customers for their signatures after we've approved their application. This will be prior to reserving their Auto-DR incentives.

The LOA lasts for the entire duration of the 36-month enrollment obligation and will dictate several additional necessities. It requires the customer to actively participate (as defined in Section 3.16) in a Qualifying DR Program (see Section 4 for details). That participation needs to be at the tested measurement and verification (M&V) level (kW) for the entire 36-month enrollment term. Those who fail to fulfill their LOA participation obligations will need to pay liquidated damages. That amount will be calculated as the kW difference between the minimum kW participation and the customer's average participation during the 36-month period. We then multiply that number by the incentive cost per M&V load reduction (kW).

$$\text{Liquidated Damages} = [(0.6 \times \text{M\&V Load Reduction [kW]} - \text{Average DR Participation [kW]}) \times (\text{Approved Incentive Amount } [$/kW])]$$

Liquidated damages will not exceed the customer's actual Incentive Payment amount and will only apply to the first installment payment (60%).

## 2.2 Resource goals

Auto-DR has project reservation and installation (project paid) goals to support the overall DR megawatt (MW) goals.

## 2.3 Issues resolution procedure

To resolve any issues, we have procedures in place to help. The series of steps depend on how long the resolution process takes.

1. The customer or the Customer Authorized Agent must contact the Auto-DR Help Desk to explain the issue
2. The Auto-DR Help Desk documents the issue
3. The Auto-DR Team works with the customer or the Customer Authorized Agent and the performance verification engineer to fix the problem



## 3. AUTO-DR PROCESS FLOW

The Auto-DR Process Flow explains the procedure and documentation needed for each step of the program. To help ease the process, we ask that customers review and comply with all rules and submit a signed Program Application. We can then enroll them in program services.

Participating Auto-DR Technology Incentive customers should provide access to facilities and data to us and our contractors. They must also show they're making progress toward Auto-DR project milestones.

Customers must complete the application package in full before the Auto-DR project is approved and funds reserved – exceptions will be reviewed by us on a case-by-case basis. We pay incentives only if all the program documentation is complete and satisfactory. They can, however, move forward with their installation project. That won't affect the approval process unless our funding is limited or depleted.

### 3.1 Customer applies to reserve funds (Step 1)

Customers can apply for incentives through the Online Application Tool (OAT) at [sceonlineapp.com](http://sceonlineapp.com).

The application must include:

1. Third-Party Project Proposal or Scope of Work (SOW) with detailed calculations and project plans
2. Controls System Diagrams (must have at least 1 DRAS client or device installed for each service account or location)
3. Authorized participants' requirements and agreement form (fill out once unless status changes, e.g. name, tax status, tax ID, etc.)

### 3.1.1 Customer eligibility

Non-residential customers who meet these requirements can participate in Auto-DR:

- ❑ Customer uses our electric services and has a valid and active utility service account
- ❑ Customer has our SmartConnect™ or interval meter installed at their project site<sup>1</sup>
- ❑ Customer has an existing utility service account with at least 12-months of billing and usage history. Intermittent loads (i.e. pumping or agricultural irrigation) need 24-months of billing and usage history.
- ❑ Customer is already enrolled in a Qualifying DR Program (see Section 4) or is eligible to enroll in a Qualifying DR Program
- ❑ Auto-DR Customized Program customers must have a minimum of 30kW, per service account, of eligible available load to qualify for Technology Incentives. We calculate available and eligible load through a customer's summer specific baseline (see section 3.11.1 Calculating Load Shed from System Test).

#### 3.1.1.1 Direct Access (DA) and Community Choice Aggregation (CCA) customers

Direct Access (DA) and Community Choice Aggregation (CCA) customers who purchase power from electricity service providers (ESP) other than us or their CCA can still enroll in Auto-DR, unless their ESP or CCA offers their own Auto-DR program. Like all Auto-DR participants, they'll need to actively participate in a Qualifying DR Program. Here are the available Qualifying DR Programs:

- ◀ Capacity Bidding Program (CBP)
- ◀ Demand Response Auction Mechanism (DRAM) Pilot

All Auto-DR customers need to have an M&V Test to verify load reduction. We rely on meter data to validate the M&V Testing. Plus, we use that meter data to confirm the second installment bonus payment (see section 3.13.4). Unfortunately, DA customers who don't use our SCE meters or our Meter Data Management Agents (MDMA) may be responsible for their entire project costs.

To avoid that scenario, DA customers can purchase an Edison SmartConnect™ meter through their SCE Account Representative.

### 3.1.2 Auto-DR Project eligibility

A project is eligible for Auto-DR incentives if its equipment can be controlled through an EMCS or other control system. Even if a project's automation system needs additional equipment or programming (i.e. control modules, rewiring, dedicated switches, etc.), it is still eligible for Auto-DR incentives. That's because the system can connect to our Demand Response Automation System (DRAS) and receive DR Event signals. As long as no manual action is needed to start a load reduction strategy, we consider it Auto-DR.

Here's an example of an Auto-DR project. The customer would have their automation system or Wi-Fi network connected to a chilled water temperature set point on a chiller. Once the customer's preferences are programmed in, the customer is ready for a DR Event. When the automation system receives the DRAS signal, it automatically starts the temperature reset without any manual intervention.

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<sup>1</sup> A customer's project site is defined as a single, free-standing building or structure; an individual utility interval meter; or a service account number where the retrofit or installation takes place.

To be eligible for Auto-DR Program incentives, a project should meet the following criteria:

1. Feature new Auto-DR-enabling equipment that provides gradual kW and kilowatt hour (kWh) reductions that correspond to baseline equipment and shall not receive or will not receive incentives for the same equipment or costs through other incentive programs
2. New equipment/systems shouldn't already be installed. When it is, it should have OpenADR 2.0 capability and be certified by the OpenADR Alliance (**see [openadr.org](http://openadr.org)**).

Some customers put multiple project sites in a single energy management solutions incentives application. In that case, the following requirements are required:

1. The customer should own or occupy the project sites
2. There should be no more than 25 service accounts per project
3. Applications must be submitted through our Online Application Tool (OAT) at **[sceonlineapp.com](http://sceonlineapp.com)**
4. The customer needs a unique service account number for each site
5. Any project sites on the customer's incentive applications must be within our service territory

The customer's sites can have different measures, operating hours, energy-use profiles, and DR strategies. Our Auto-DR Program Administrator will determine the project cost for each site.

If customers combine sites and measures in one application, please be aware of a few details. The projects won't be reviewed, approved, or receive payments until paperwork on each site and measure is complete. For projects implemented in phases, we need individual applications for each.

California's Investor Owned Utilities (IOUs) require location-specific notification for all of our DR Event participants — both existing and new customers. If participants enroll multiple facilities at multiple sites, that customer must have a client/device (or equivalent) for each facility or site because they need to have the ability to receive and respond to DR Event signals. Also, the customer should monitor DR Event participation for each individual site or measure, based on the site address and service account.

Customers that receive Technology Incentives through the Auto-DR Program may be ineligible to participate in some SCE and non-SCE programs for at least 36-months so as not to receive overlapping incentives. Customers should contact their SCE Account Representative to ensure program eligibility.

### **3.1.2.1 Auto-DR Technology eligibility**

1. Technology's DR capability should be previously verified
  - A. Technology must be evaluated in an independent assessmentOr
  - B. Technology must be currently installed and available for evaluation by our program staff. The review should be performed either in SCE territory or somewhere that can be easily accessed by our program staff. The location should allow us to document or verify both pre- and post-project conditions.

2. When EMCS software and programming costs for battery storage technology is used for DR, we may offer Auto-DR incentives. We'll review these cases individually.
  - A. Battery storage technology receiving Auto-DR incentives should be used for Demand Response Event participation only, not permanent load reduction or day-to-day demand side management, and must be submitted through the Auto-DR Customized Program (see section 3.13)
  - B. Make sure technology is under manufacturer's warranty for a minimum of three years. The cost of the warranty may be eligible for Auto-DR incentives, but can't exceed 2% of the total cost of the EMCS.
    - a) Technology includes the client device (EMCS) that communicates directly with our DRAS
    - b) Warranty eligibility is limited. It does not include communication between the controls & the controlled equipment/hardware.

### 3.1.2.2 Ineligible projects

Projects that are ineligible for Auto-DR incentives include supply or load shifting projects such as on-site electric generation, thermal energy storage systems, and others. Incentives for these projects are available under separate programs.

Auto-DR incentives are also unavailable for semi-automated measures, manual DR measures, manual improvements, or changes to the way customers use existing equipment. This also applies to cameras, software license(s), maintenance fees, recurring costs, and metering costs at the site or facility.

Auto-DR incentives are not eligible for the energy storage systems, such as a battery. SCE offers incentives for energy storage projects under separate incentive programs. Only costs attributed to connecting the energy storage system to a customer's EMCS and/or purchasing and installing an Auto-DR client in the energy storage system for the sole purpose of responding to a Demand Response Event shall be eligible for Auto-DR incentives.

### 3.1.3 Third-party DR providers (Aggregators)

Customers who use third-party DR providers (aggregators) are free to participate in Auto-DR. They just need to enroll in either the DRAM Pilot, AMP or CBP program (see Section 4). Like all Auto-DR customers, they'll need to have M&V Testing to verify load reduction. From there, the aggregators will receive reduction signals from APX (an infrastructure provider). After the M&V is completed, they can trigger the customer's EMCS directly to launch the automated load reduction.

Those who choose to use aggregators are subject to certain considerations to receive Incentive Payments.

Auto-DR customers enrolled in AMP or CBP and have an OpenADR 2.0 certified virtual end node (VEN) will have to do things a little differently. They aren't eligible to receive Auto-DR signals from their aggregator for M&V Testing. Instead, they need to pull the Auto-DR signal directly from the DRAS. This action ensures the system is automated with all DR Programs. It also paves the way for DR services like fast DR and creates flexibility to accommodate our electric grid.

The aggregators hold some liability throughout the program. They're responsible for each service agreement's nominated load. And they assume any risk/penalty if a customer fails to shed the required load. It's the customers who need to check that their load is nominated monthly. When an event is called, they need to participate to their tested kW. It's vital that those with an aggregator participate in these events for the first 12-month period. That's the only way to stay eligible for the 40% participation bonus (see Section 3.16).

## Cloud-based projects and stranded asset testing

With cloud-based Auto-DR projects, a remote server (an EMS) is the communication hub. That's where our DRAS signal for a DR Event is sent. When the EMS receives that signal, the customers' DR strategies launch and activate at facilities across a campus or region. These projects are popular with Auto-DR technology vendors, energy service providers, and aggregators for a few reasons:

1. They have attractive cost efficiencies
2. They use central servers instead of localized servers
3. They have controls at individual facility sites

For us, potential problems are possible. Cloud-based solutions may create stranded asset risks if a customer becomes disconnected from the cloud or ends their relationship with the cloud vendor.

To manage the stranded asset risks, vendors and aggregators using cloud-based equipment must meet these requirements:

1. DR Event initiation and termination communications between DRAS and the cloud must follow the OpenADR 2.0 protocol
2. Vendors need to give customers and our team written instructions about the local VEN. We need to know how to reconfigure the VEN to pull a signal directly from our DRAS. That way, we can direct the equipment to automatically respond so the DR strategies activate even without the cloud.
  - A. During the project installation, the vendor should provide additional hardware and programming services to the customer. These services are eligible for Auto-DR incentives.
  - B. The additional hardware will be similar in construction. For example: if the main VEN is built for an outdoor environment, any additional hardware will be designed for the same.
  - C. The vendor's instructions and hardware should allow us to redirect the VEN's connection to our DRAS with no outside assistance, i.e., no passcodes, etc.
  - D. All future revisions to the hardware/software must retain the standalone capability
3. The site's VEN must include the proper security certificate for connection to our DRAS. It should also be able to connect to OpenADR 2.0 (the 1.0 endpoint is not allowed).
4. Any functions related to reduction loads for Auto-DR incentives need to be saved — even without the cloud. Clouds typically offer control intelligence. But standalone equipment must have default programming in case the vendor's cloud service falters. That's the only way to achieve the load shed level approved for our Auto-DR incentives.

### 3.1.4.1 Stranded asset testing

As a safeguard, we require stranded asset testing for cloud-based projects. We want to make sure the local VEN can communicate with our DRAS without the vendor's cloud. This type of testing is typically done right after project installation and commissioning (pre-testing), but before the Load Shed Test. This way, we can verify it connects directly with our DRAS.

Here's how it works. Our Auto-DR Team initiates an Event notification signal from our DRAS. We make sure as the signal transmits to the onsite VEN, it does not go through the cloud. We conduct this test once per VEN. However, additional demonstrations can be ordered at any time if circumstances have changed due to hardware or software updates, etc.

\*Vendors that cannot pass the cloud-based project eligibility or stranded asset testing may connect to our DRAS, but will not be eligible for our Auto-DR incentive.

### 3.1.5 Stranded asset option for outsourced Auto-DR systems

Similar to the cloud option, Auto-DR can be outsourced but still owned by the customer. In these cases, the Auto-DR system is deeply integrated into the customer's EMCS. And ending the vendor relationship would make it impossible to operate the management and control system.

However, when customers outsource the Auto-DR system, it can cause a stranded asset risk for us. That's because the functionality of DRAS connections is not dependent on a third-party vendor. As we do with all projects, we'd need to make sure the customer's control system has locational dispatch capabilities. That's a requirement for all Auto-DR executions.

## 3.2 Reservation of funds (Step 2)

When a customer or its Customer Authorized Agent submits an application (see [sceonlineapp.com](http://sceonlineapp.com)), we'll review the application and take one of two actions: reserve the incentives or reject the application.

First, a performance verification engineer (PVE) will conduct an evaluation. The customer's incentive reservation will be based on those results and a kW review. Our Auto-DR Team may also conduct a pre-inspection for any project. This is done in addition to a Customer Authorized Agent's prior audits and site visits.

After the incentive reservations are approved, we submit the Auto-DR application for processing. Once those actions are complete, the customer becomes a program participant. Auto-DR lets both the customer/Customer Authorized Agent and their SCE Account Representative know about the reservation in writing. At that point, the customer can begin installation.

If the customer is ineligible and the incentive is not reserved, we'll record the rejected application. Then we'll send a Project Rejection email to the SCE Account Representative and customer/Customer Authorized Agent.

*Note:* If the project scope changes after we approve an Auto-DR application, we may need to cancel the current application. The customer can then resubmit a project with a new application using the most recent program guidelines. They also have the option of applying for change only, if applicable.

Once a project is approved, we reserve funds for 12-months to see how it's progressing toward remaining milestones. If the project can't be completed within that 12-month period, we may approve extensions. We'll grant these on a case-by-case basis at our sole discretion.

We may request proof of progress at any time during the reservation period. If proof of progress is not provided to our satisfaction, we reserve the right to terminate the Auto-DR project.

### 3.2.1 Reservation period and early withdraw penalties

Customers need to stay enrolled in a Qualifying DR Program for at least 36 consecutive months. That's the only way to qualify for incentives. Reimbursement will be required from those who fail to stay enrolled in a Qualifying DR Program for those 36 consecutive months, or have businesses that move or shut down. The reimbursement will be a pro-rated portion of the Auto-DR technology incentive.

Incentive Payment 2 (IP2) is a participation bonus. The amount is based on the first year of program participation (see Section 3.13.2). The pro-rated portion of the Auto-DR incentives stems from Incentive Payment 1 (IP1).

**$(36 \text{ Months} - \text{Number of months fulfilled or enrolled in a Qualifying DR Program}) / 36) * \text{Total Incentives Paid in IP1} = \text{Balance Due}$**

### 3.2.2 Performance Verification Engineer (PVE)

After we receive a third-party Auto-DR project proposal, a PVE conducts an evaluation of the submitted report. The goal is straightforward: to review and evaluate the proposed DR strategies. We need to make sure these strategies are in line with the engineering calculations that estimate the plan's kW reduction. The PVE may ask the Client Authorized Agent or participant for clarification or additional information as a follow-up.

The PVE and Auto-DR Program manager may make adjustments in the proposal to maximize success. They often modify the kW load shed potential and eligible incentives that are in the original project proposal. That's because the program's goal is to achieve the highest level of reliability and consistency when it comes to kW-enabled Auto-DR. Making sure the kW load shed potential for Auto-DR incentive projects are achievable inspires customers to keep participating in DR Events.

After the PVE evaluates a proposal, the adjusted kW may be lower than the initial kW. If that happens, the Auto-DR Team notifies both the customer or their Client Authorized Agent and their SCE Account Representative of the findings.

## 3.3 Technical coordinator assigned (Step 3)

After the reservation of funds is requested and confirmed, a Technical Coordinator (TC) can be assigned to the project at your request or your Customer Authorized Agent's request. TC expenses are paid by the Auto-DR Program.

The TC's function is to support customers during installation to ensure a reasonable timeline for completion. While support services are limited, a TC is available to answer any technology-related questions. When it comes to Auto-DR incentives program projects, our Auto-DR Team will not supervise, direct, or otherwise control

construction or installation work. We will also never purchase equipment, material, or supplies for permanent incorporation into buildings or job sites that are related to Auto-DR incentive programs.

### 3.4 Customer installs equipment (Step 4)

Once funds are confirmed, a customer has 12 months to complete the project and submit the installation packet.

#### 3.4.1 Installation deadline

All projects must demonstrate reasonable progress towards completion of project installation. As the program administrator, we may determine a project is not making reasonable progress and could cancel the agreement. If the project is not complete within 12 months, the customer may request an extension. SCE, at its sole discretion, grants any extension requests.

### 3.5 Customer requests DRAS participant (login) information through our Self-Service Module (Step 5)

Before submitting the installation packet, customers should request their DRAS login credentials. They can receive these through the Self-Service Module (SSM). Our Auto-DR Help Desk will give a unique Username and Password to each service account that is participating in Auto-DR and has an EMCS.

To sign in using the DRAS credentials, go to **sce.openadr.com**.

For questions regarding the DRAS credentials or for help signing in, contact the Auto-DR Help Desk at **AutoDR@sce.com** or call **1-866-238-3605**.

### 3.6 SCE Connects equipment to the DRAS (Step 6)

To connect the client device to DRAS, the TC and Customer Authorized Agent use the login credentials from the Auto-DR Help Desk.

Our Auto-DR Team is the primary communication contact for the customers. We support and coordinate with our vendor, Honeywell, to conduct continuous DRAS connectivity testing. The team monitors the site's connectivity to make sure the DRAS server is working properly and that it stays connected to the customer's operation. The testing also ensures if there are connectivity-related performance issues, they're addressed immediately.

#### 3.6.1 Monitoring DRAS function

Honeywell is responsible for maintaining the DRAS and keeping the connectivity strong. But our Auto-DR Team also monitors the system, ensuring maximum uptime and a quick response to service outages. The automated testing framework "pings" the DRAS from different locations. It then notifies our Auto-DR Team of significant outages. We inform other SCE program staff about the outages and follow up with Honeywell to ensure service is restored.

#### 3.6.2 Customer connectivity and non-invasive testing

Part of a DRAS' functionality is to alert Honeywell and the customer when connectivity is lost with a client device. Since our Auto-DR Team is also notified, we work directly with the customer and Honeywell to find the connectivity issue. To find the source, we use non-invasive testing. This type of testing partly relies on the DRAS'

monitoring capabilities. Sites that lose their connection often are flagged for follow-up. When a problem can't be addressed remotely, a technical team is sent to trace the source of the issue. There are some sites that have intermittent connectivity because of internal network configurations. Even though they're sufficiently connected, they may appear to experience brief outages. In these situations, our Auto-DR Team monitors those sites and adjusts notifications to launch when connectivity is best.

Annual tests are another way to check connectivity. When issued, they poll DRAS at all existing sites. The goal is to find any sites that fail to respond to an Event signal. The poll is achieved through the customer's EMCS, which grabs the DR Event notification. It's considered "non-invasive" because the Event is cancelled before it can initiate reduction strategies.

### **3.7 Customer and Customer Authorized Agent conduct system verification testing to verify DRAS communication (Step 7)**

In addition to verifying DRAS communication, the customer should also Pre-Test (commission) the site. The purpose is to verify functionality and load reduction capability.

If we are at fault and the M&V Test is unsuccessful at verifying load reduction, the customer is eligible for one retest at no cost. If SCE is not at fault, and an additional M&V retest is necessary, the costs of any additional M&V retest(s) will be deducted from the customer's eligible incentive.

### **3.8 Customer submits installation packet (Step 8)**

The Installation Packet includes the following forms:

- Customer Agreement for Auto-DR Technology Incentives
- Technical Coordinator Installation and Customer Enablement Form for Auto-DR Technology Incentives, if applicable
- M&V Report for Auto-DR Technology Incentives.

Customers should include invoices of expenditures in the Installation Packet. They should be detailed and broken down in categories such as quantity, cost, rate, rate-hours, materials, raw materials, labor, time sheet receipts, purchases, contractor, sub-contractor, and more.

Grouped line items are not allowed. The invoices should also itemize and list everything separately. An Invoice Requirements Checklist is provided in Section 3.8.2 below.

We want the costs itemized so during a site inspection, our Auto-DR Team can verify the installation of major equipment components. The more complex the project, the more precise the invoice documentation needs to be. In particular, costs above \$5,000 should be itemized in detail.

#### **3.8.1 Change in project scope**

If the project scope changes dramatically from what was previously reviewed, the customer may need to resubmit a project application. Substantial changes include large modifications to proposed equipment types, sizes, quantity, or configuration. Expansions that include additional retrofits also fall under that umbrella.

Once the project scope and calculations are revised, it will be subject to another review. It may also require a new agreement before equipment/systems can be removed or installed. Under reasonable circumstances and based upon our discretion, we may grant exceptions in some cases.

### 3.8.2 Invoice requirements checklist

All invoices should be submitted via:

- ❑ **Email to: AutoDR@sce.com**
- ❑ **Mail to: Auto-DR Technology Incentives, 1515 Walnut Grove Ave., 2nd Floor, Rosemead, CA 91770**

Invoices should include:

- ✓ Label stating the document is an invoice
- ✓ Date of submittal
- ✓ Customer Authorized Agent contact name, job title, contact information and address
- ✓ Service Contract #
- ✓ Reference to PO number (if available, place the Contract number below the PO number)
- ✓ Invoice #
- ✓ Page # of Invoice #
- ✓ Contract Summary: Contract value (not to exceed amount), invoiced charges to date plus contract or P.O. balance
- ✓ Labor cost detail: Itemized invoice consistent with contract and payment terms
  - ◁ In-house labor: Include hourly or per unit rate (whichever is applicable). Make sure rate is consistent with the contract, as well as corresponding quantities and current charges. Include dates and description of work performed.
  - ◁ Non-in-house labor: Hours for each classification of work (management, programming, etc.)<sup>1</sup>
- ✓ Parts and Materials
- ✓ Line items for all major purchases
  - ◁ Purchases over \$5,000 per line item will require supporting documentation as will any manufacturer warranty costs (reimbursed up to 2%)
  - ◁ Manufacturer warranty costs require supporting documentation (reimbursed up to 2%)
  - ◁ Sub-Contractor invoices (if applicable)

Parts and Labor not covered by:

- ✓ Leasing/Leased equipment
- ✓ Cloud-based controls
- ✓ Metering or telemetry equipment
- ✓ Service contracts
- ✓ Recurring costs (ex. DSL lines)
- ✓ Customer or battery equipment

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<sup>1</sup> Timesheets and actual receipts are not required for each invoice submission. However, the contractor should be prepared to provide all supporting documents to substantiate the invoice costs if requested.

### **3.9 TC completes customer DRAS training and obtains customer signature for the “Technical Coordinator Installation and Customer Enablement Form for Auto-DR Technology Incentives” form (Step 9)**

After confirmation of communication with the DRAS, the customer may complete and sign the “Technical Coordinator Installation and Customer Enablement Form for Auto-DR Technology Incentives” form.

The TC’s signature on the form confirms the following:

- The customer is online and communicating with the DRAS
- The customer is requesting an M&V date 2-4 weeks in advance

### **3.10 Quality assurance (Step 10)**

A Quality Assurance (QA) review requires completion of all forms and documentation, and does the following:

- Confirms customer’s Qualifying DR Program enrollment (prior to requesting M&V) and DRAS communication
- Add Auto-DR profile to our business system and enable appropriate controls in the DRAS
- The customer actively participating in DR Events through Auto-DR

### **3.11 Measurement and Verification Test (Step 11)**

The PVE will review project data prior to performing the Measurement and Verification (M&V). After the review, the customer will be contacted to setup the M&V Test. Before the test gets underway, the customer needs to be online and communicating with the DRAS for 48 consecutive hours.

An inspection and two-hour M&V Test are scheduled once commissioning is done and installed equipment is working. The PVE will plan these tasks within a specific time period/parameters, choosing a convenient time for both the customer and Customer Authorized Agent.

Before the inspection begins, the PVE will review test expectations with the Customer Authorized Agent.

The inspection should verify the following:

1. Automation controls are located and verified for proper installation and connection to the related equipment. Photos are taken.
2. Pre-test site conditions are verified to the proposed measures. The PVE may record observations of foot-candles, temperatures, motor frequencies, and more.
3. Energy efficiency measure installation is verified for Integrated Demand Side Management (IDSM) projects. Photos are taken.
4. The PVE documents the test’s start-time. The test lasts approximately as long as a DR Program’s minimum participation requirement — two hours. If there’s a problem initiating the test, the PVE, customer and Customer Authorized Agent try to find the source of the issue. A second test may be required. Since each test is unique, it may or may not be necessary for the PVE to remain at the site for the duration of the test.
5. A second set of observations may be made during the test. This is to verify the site conditions after the sequence of operations (the same observations as pre-test conditions apply). Photos are taken.

6. The PVE also notes any comfort or safety issues that could arise during the test. For example, curtailed equipment may make some areas too dark or too hot.
7. The inspection ends after the second set of observations are complete and no other potential issues are noted during the test. The test's observations are then compared to interval data that was recorded during the test period. This establishes the site's verified load reduction.

The PVE then sends the M&V results to us by filing the "Measurement and Verification Report for Auto-DR Technology Incentives" form.

### 3.11.1 Calculating load shed from system test

We provide the following information to explain how we determine the customer's load reduction. Each situation is unique and not all testing facilitates use these methods. The Auto-DR Program staff will examine all reasonable options when evaluating test results.

To tally reductions resulting from a test Event, we can only use utility revenue meter data. The incentives and load shed that we calculate after a site verification testing depends on the accuracy of the customer baseline (baseline is the hourly load the facility would have used without a DR Event). The actual load during the DR Event is subtracted from the calculated baseline for each hour. The program incentive is based on the average kW performance for each hour of every Event. This continues through the entire DR season.

Our DR Programs each have their own baseline calculation strategy. During testing, the baseline can vary a lot. That variation depends on conditions during testing in comparison to typical summer daytime activity. The PVE is aware of this and can make adjustments to the baseline to account for these seasonal fluctuations.

Auto-DR defines a baseline calculation methodology to determine program incentives.

- ❑ Hourly Customer Summer Specific Baseline (CSSB): The CSSB is the hourly summer average kW for summer weekdays, non-holidays, and non-Event days. It's used with the 10-in-10 baseline to help determine the customer's weather-dependent, demand reduction for a test Event.
- ❑ 10-in-10 Baseline: The 10-in-10 baseline is determined using a 10-day rolling average energy use profile of the last 10 similar days before a test Event. It's calculated on an hourly basis from noon to 8 p.m. and uses the average of the same hour for the past 10 similar days. The 10-in-10 includes Monday through Friday. It excludes holidays and days when the customer was paid to shed load on an interruptible or other reduction program. It also omits days when the customer endured rotating outages. The 10-in-10 may vary for each hour and each Event.
- ❑ Recorded Test Energy (RTE): The RTE is the customer's actual recorded kWh of demand during a test Event
- ❑ Calculated Reduced Energy (CRE): CRE is calculated using this formula:  $CRE = (\text{applicable baseline} - RTE)$ . Adjustments can be made for seasonal load variations.
- ❑ Incentive Payment (IP): The IP is based on the average CRE calculated during the test Event, multiplied by the incentive level per kWh/hour
  - ◁  $IP = CRE * \text{applicable incentive level}$

The scheduling of the customer's initial test varies, depending on a few factors:

- ❑ The timing of the installation of specific measures
- ❑ Availability of processes and personnel
- ❑ Seasonal schedules
- ❑ Availability of test personnel to schedule the tests at the customer's site

With that in mind, the schedule of a test could happen during mild conditions or at the height of summer. If testing occurs when it's mild out and HVAC loads are low, the initial test results will be adjusted. This is to account for reduced DR-potential that results from cooler weather. Adjustments can also be used for gauging non-weather-related loads that may not be accurately represented under the (applicable baseline – RTE) method. This determination is made on a case-by-case basis.

A customer's energy loads are all looked at closely to ensure consistency and confirm there's no diminished load (aka: a large reduction in available capacity). If we detect a diminished load, we adjust the baseline.

If our methods fail to reflect the actual loads, our Auto-DR team may change the process.

However, if the customer's project fails the inspection and testing, their application may be declined. Sometimes multiple site inspections are needed. If that happens, the customer may need to pay re-inspection fees.

### 3.12 Auto-DR Express Technology Incentives (Step 12A)

Auto-DR Express uses fixed DR (kW) savings for standard technologies. The 60/40 payment model doesn't apply to the Express incentives.

Customers who select Auto-DR Express could qualify for incentives up to 100% of project costs. The incentives can't exceed \$300 per kW of "predetermined" load reduction.

Express incentives are not calculated using the summer-specific baseline or the 10-in-10 baseline.

**Incentives are based on:**

- The customer's maximum kW (demand), using their most recent 12-months of usage
- Predetermined (deemed) savings in 25 kW increments
- Facility Type
- Climate Zone (ZIP code)

Incentives are paid in full after the project is completed and equipment undergoes a two-hour verification and demonstration Event.

**Predetermined kW savings for standard technologies:**

- Lighting controls: 20%, 30%, or 40% reduction
- Temperature reset controls for HVAC: 4°F, 5°F, or 6°F

Or

- Duty-cycling of HVAC compressors and supply fans: 10, 15, or 20 minutes (for offices and food stores)
- Duty-cycling of HVAC compressors and supply fans: 15, 20, or 30 minutes (for retail only)

**Qualifying Customers (based on California End Use Study — CEUS):**

- Office 50-499kW
  - ✓ (Daycare, churches and sales offices under 100,000 sq. ft.)
- Retail 50-499kW
  - ✓ (Stores in strip malls and studios or galleries)
- Food Stores 100-250k
  - ✓ (Convenience stores including those at gas stations and liquor stores)

Businesses interested in participating should use the Auto-DR Express Solutions Tool to calculate their kW savings. It's available at [sceonlineapp.com/measures/measureselect.aspx](http://sceonlineapp.com/measures/measureselect.aspx).

To qualify for incentives, customers must remain enrolled in an eligible DR Program for at least 36 consecutive months. This is fully described in Section 3.16.

### **3.13 Auto-DR Customized Technology Incentives (Step 12B)**

Customized incentives are paid in two installments — on a 60/40 basis. Customers who submit Auto-DR Customized incentive applications should have a minimum of 30kW of eligible load to qualify. We determine available and eligible load using a customer's summer specific baseline (see section 3.11.1 Calculating Load Shed from System Test). Those who take advantage of the Auto-DR Customized option could qualify for incentives up to 75% of project costs or \$200 per kW, whichever is less.

The IP1 will be 60% of the approved technology incentive amount.

- The customer will receive incentives after their enrollment in Auto-DR is verified
- Processing may take six to eight weeks.

IDSM projects with Energy Efficiency (EE) measure(s) receive their first Auto-DR Incentive Payment after the measure's installation is complete.

For deemed EE projects, installation is verified during the Auto-DR site inspection and testing. Customized EE projects need to have installed measure(s) inspected and approved by our EE PVE.

#### **3.13.1 60/40 Background**

In 2010, an Auto-DR Cost Effectiveness Study was completed. Using 2009 participation data, the study found that Auto-DR customers received higher incentives than their performance earned.

The results prompted the California Public Utilities Commission (CPUC) to make some cost-effective-inspired changes. They ordered the IOUs to switch to a performance-based incentive structure.

The structure had dual purposes:

- Motivate Auto-DR customers' performance during the DR season by reserving a portion of the Incentive Payment for up to 12-months following installation
- Motivate enrollment by providing participants with all program incentives to invest in Auto-DR-enabled equipment

### 3.13.2 Incentives are available to participants in two installments on a 60/40 basis

Auto-DR participants earn 60% of the total program incentive in the first installment. This depends on verification of eligibility; installation of qualifying DR measure(s); and M&V of on-peak load reduction (kW) potential from their installed, qualifying DR technology.

The second installment is the participation bonus. Participants receive up to 40% of the remaining incentive. Customers must actively participate for the entire 12-month period to be eligible for the bonus. Throughout the DR season, they also need to achieve an average of 61% of the verified kW reduction.

This is how the second installment is determined: We calculate the difference between the actual percentage performance and the 60% benchmark. Then we multiply that number by the total Auto-DR incentive amount. The incentive amount is never less than zero, and never more than either the project cost or the project's approved incentive. That rule abides even if actual performance exceeds 100% of verified kW.

The calculation of average kW performance is based on DR Events, regardless if a customer opted out of an Event. In these cases, DR Event opt-outs are regarded as zero kW performance. Since Auto-DR incentives support customers' investments in DR-enabling technology, it's important to actively take part in every Event.

### 3.13.3 Incentive calculations

#### **Installment Payment 1 (IP1): 60% of Approved Incentive Amount After Installation and M&V.**

Approved Incentive Amount (\$) is the lesser of one of the following:

1. \$### x M&V Load Reduction (kW)
2. \$### x (75% of actual and reasonable) cost for installation and purchase of qualifying equipment

#### **Installment Payment 2 (IP2 or Participation Bonus): Bonus of up to 40% of Approved Incentive Amount Based on DR Performance during the First 12-Months After Incentives Are Paid.**

$(\text{Average DR Participation (kW)} / \text{M\&V Load Reduction (kW)}) - 0.6 \times \text{Approved Incentive Amount (\$)}$

$\text{Average DR Participation (kW)} = \text{Total Consumption Reduction for all Events (net kW)} / \text{Total eligible Event hours (h)}$

The total Approved Incentive Amount is based on M&V of the load reduction by a third-party engineer

To qualify for incentives, the customer must remain enrolled in an eligible DR Program for at least 36 consecutive months (see Section 4, below)

40% Participation Bonus (IP2) after verification of eligibility

### Installment Payment 1

**Amount:** 60% of your approved incentive amount  
**Timing:** After installation and measurement verification

### Installment Payment 2: Participation Bonus

**Amount:** Bonus of up to 40% of your approved incentive amount  
**Timing:** Based on your DR performance over the 1<sup>st</sup> 12 months

#### Participation Bonus Calculation:

$$\left[ \frac{\text{Average DR Participation [kW]}}{\text{M\&V Load Reduction [kW]}} - 0.6 \right] \times \text{Approved Incentive Amount [\$]}$$

$$\text{Where average DR Participation [kW]} = \frac{\text{Total Consumption Reduction for all Events [net kWh]}}{\text{Total eligible Event hours [h]}}$$

Where approved incentive amount [€] is the lesser of \$200 x M&V load reduction [kW] or 75% of actual and reasonable cost for installation and purchase of qualifying equipment.

Your total eligible incentive amount is based on M&V of your load reduction performed by a third-party engineer. To enjoy our incentives, you must remain on a Qualifying DR Program for at least 36 consecutive months.

### 3.13.4 Installment payment 2 (IP2) / participation bonus (Step 13)

Customers' Auto-DR technology incentive history determines if they have completed the 12-month participation period.

The 12-month participation period begins when the IP1 (60%) is mailed.

- To be eligible for IP2, the customer must average at least 61% participation across all eligible Events or on a Qualifying DR Program
- If no DR Events occur, a second M&V Test is required to validate equipment performance and available load shed

A final performance report is created after a customer completes a first year on a Qualifying DR Program. Once the report is finished and approved, the Auto-DR Team sends the IP2 to the accounts payable department. Final incentives are paid one year after the IP1 incentive date.

#### 3.13.4.5 Participation bonus (IP2) eligibility review (Step 14)

We review the customer's Event performance during the first 12-months of their DR Program participation. This is our process:

- We review & confirm customer's enrollment in a DR Program
- We review DR Program Event dates and load reduction nominations (if applicable) to see how customers performed during Events
- We forward DR participation results to program management

#### 3.13.4.6 Participation Bonus (IP2) Verification (Step 15)

Program management reviews a customer's DR performance. They also assess eligibility for the IP2. Once results are approved, they create and send a results verification email to the SCE Account Representative. The account manager then reviews the customer's DR participation results and considers eligibility for the IP2 bonus.

### 3.13.4.7 Participation Bonus (IP2) Processing (Step 16)

We approve and process the IP2, up to 40% of the remaining incentive. Processing may take six to eight weeks.

## 3.14 Project and customer incentive caps

Auto-DR incentives are capped at less than \$200,000 for each service account. Unless we approve a revision before the project is complete, we also cap incentives at no more than \$50,000 above the reserved amount. Incentives will never add up to more than the total eligible cost of a project.

We like to have a variety of project types enrolled in the program. Because of this, we have a cap on incentive dollars per customer. Participants can't receive more than \$5,000,000 of incentives based on their individual Customer ID. However, under the cap, we allow multiple service account IDs to qualify under one Customer ID.

## 3.15 Ongoing performance monitoring

When customers start the next DR season, the Auto-DR Program continues to monitor their progress. Our team gives customers feedback about their DR Event performance and helps them resolve any problems along the way. Their ongoing DR Event participation and performance are based on their kW shed load.

## 3.16 Participation in DR Events

Customers joining Auto-DR Programs have to actively participate. They must enroll for one full year after installation and should take part in all of that program's active DR Events.

Customers enrolled in AMP and CBP need to make sure their loads are nominated monthly to participate in those program Events. They should confirm that information with their aggregators. Remember, determining the amount of IP2 (up to 40% of total eligible incentives) is based on actual DR participation over all Event hours.

Those participating in AMP and CBP must have an OpenADR 2.0 certified client on-site. It should have the ability to receive an automated DR Event signal from our DRAS. Customers can also choose to receive a signal directly from their aggregator. In either case, the site needs to connect with locational dispatch.

"Actively Participate" is calculated as follows:

**Average DR Participation [kW] = Total Reduction for all Events [net kWh] / Total eligible Event hours [h]**

- A. For Critical Peak Pricing (CPP): When a CPP Event is called, customers must reduce their electricity demand for at least 61% of their unadjusted 10-in-10 baseline. There are 12 CPP Events per year.
- B. For Demand Bidding Program (DBP): When a DR Event is called, customers must reduce their electricity demand to match kWh of at least 61% of the M&V load reduction required for that program. The load reduction should last for whichever time period is greater — at least two hours or for the submitted bid hours.

- C. For Aggregator Managed Portfolio (AMP): During a DR Event, customers must reduce their electricity demand to match kWh of 61% or more of the program's required M&V load reduction hours. Even when no Events are called, customers must nominate (through their provider) 60% of the M&V load reduction hours for all eligible months.
- D. For Capacity Bidding Program (CBP): When a DR Event is called, customers must reduce their electricity demand to match kWh of at least 61% of the M&V load reduction required for that program. Even when no Events are called, customers must nominate (through their provider) 60% of the M&V load reduction for all eligible months.
- E. For Demand Response Auction Mechanism Pilot (DRAM): For each DR Event, customers need to provide actual dispatchable on-peak load reduction. They also must make sure their DRP registers their service accounts with the California Independent System Operator (CAISO). If the DRAM Pilot is a customer's Qualifying DR Program, written confirmation will be needed, stating that their service account(s) were registered during an on-peak period. The customer or the DRP can provide this documentation. Once submitted, the participation requirements under this agreement will be satisfied.

Participation for all qualifying Auto-DR Programs will be calculated using the Auto-DR M&V load reduction kW, updated upon completion of the M&V Test. The M&V load reduction of the qualifying DR measures shall be determined because of our M&V of the actual dispatchable on-peak load reduction enabled by such measures. Customers' participation calculations include negative load reductions.

Negative load reductions are included in the customer's participation calculations.



## 4. DEMAND RESPONSE PROGRAMS OVERVIEW

Auto-DR Program participants must be currently enrolled or in the process of newly enrolling. They'll need to remain enrolled for 36 consecutive months. During that period, they have the freedom to switch their enrollment to a different Qualifying DR Program. But they have to maintain active participation and achieve the program's required load reductions. If a customer does shift to another program, total kWh or kW nomination liabilities will be pro-rated and adjusted based on the time they participated in the previous program.

Here is a brief description of the current DR Programs available to Auto-DR participants:

1. **Critical Peak Pricing (CPP):** CPP is available to commercial and industrial customers and provides bill credits during the summer months. In exchange for the credits, we will call 12 CPP Events a year, when electricity demand and/or prices climb. During these Events your energy charges will rise significantly. However, if you can reduce or reschedule your usage to off-peak times on a CPP Event day, CPP may be a way to help lower your overall electric bill.
2. **Real Time Pricing (RTP):** RTP is ideal for businesses with a flexible operations schedule. RTP's rate benefits customers who can reduce energy during higher-temperature-based hours or shift that energy use to lower-priced hours. Except for holidays, RTP prices are set according to season, temperature, and time of day. Temperature-based hours are determined by the previous day's high temperatures in downtown Los Angeles. We receive this information from the National Weather Service. Participants can register for courtesy alert notifications to help them plan their energy use and maximize savings during an Event.
3. **Capacity Bidding Program (CBP):** CBP is an Internet-based program that helps sustain the electrical grid when demand is at its highest. A customer submits monthly nominations (aka: "bids") to lower energy use and receives compensation in return. The payment is based on their actual energy reduction during a CBP Event. The program is flexible, giving customers the freedom to adjust their bid and participation preferences every month. They can choose to be notified the day before an Event or on the day of the Event.

4. **Aggregator Managed Portfolio (AMP):** Through the AMP program, we work with selected DR aggregators to help maintain an efficient and reliable energy supply. AMPs design their own programs and offer DR options that we may not offer directly. Those who participate have the opportunity to choose the aggregator that has the best services for their business. This program will no longer be available as a Qualifying DR Program after December 31, 2017.
5. **Demand Bidding Program (DBP):** DBP is a year-round, no-cost, flexible, and penalty-free program. It offers bill credits to business customers who voluntarily reduce energy use when an Event is called. DBP Events can occur throughout the year—Monday through Friday between noon and 8 p.m. Holidays are excluded. For each Event, participants can place and manage bids; monitor Events; and vary bid commitment by hour. Reduction bids must be for at least two consecutive hours during an Event. Those who have real-time communicating metering can monitor their performance during Events. This program will no longer be available as a Qualifying DR Program after December 31, 2017.
6. **Demand Response Auction Mechanism Pilot (DRAM):** The DRAM pilot is a DR capacity auction open to third-party DRPs. The purpose is to provide us with DR resource adequacy (RA) through a standard, non-negotiable purchase contract. When we give third parties DRAM contracts, they must provide us with DR capacity supply plans and register their DR resources into the California Independent System Operator (CAISO) wholesale energy market. The DRP dispatched its DR resources in accordance with CAISO market awards.

#### 4.1 Examples of demand response strategies

Most of our commercial DR customers use DR control strategies for HVAC and lighting loads. Industrial customers typically adjust their process loads to accommodate Events. The control strategies used most frequently include:

- ❑ **Global Temperature Adjustment:** Customers adjust their EMCS to receive the DR Event signal from our DRAS. The temperature change is pre-programmed to raise (typically two to eight degrees) by the customer. When the signal is received, the EMCS increases the set-point temperature to the pre-programmed preference for a set period of time.
- ❑ **HVAC Equipment Cycling:** Facilities with multiple packaged HVAC systems benefit from the HVAC cycling method. Customers configure select units to receive a DR Event signal from our DRAS. When a DR Event is called, the signal is received and Auto-DR shuts off compressor units in parts of the building's systems. The compressors stay off for a reasonable amount of time, until we send another signal. Then, those units restart and other compressor units shut off.
- ❑ **Other HVAC Adjustments:** Other HVAC shed strategies include decreases in duct pressures, auxiliary fan shutoff, pre-cooling, valve limits, and boiler lockouts
- ❑ **Light Shutoff or Dimming:** Lighting circuits can be wired to receive DR Event signals from our DRAS. When a signal is received, Auto-DR shuts off or dims the lighting throughout the DR Event. Customers typically choose to dim/shutoff lighting in common areas that get enough natural light or lighting from other areas to sustain a safe environment.
- ❑ **Other Lighting and Miscellaneous Adjustments:** Other shed strategies include bi-level lighting switches and motor/pump shutoff
- ❑ **Process Adjustments:** Since industrial processes vary in nature, customers tailor a strategy for each process. When it comes to Auto-DR, customers usually modify secondary processes that have a lot of storage available. In these cases, the equipment can be completely shut-down during a DR Event. They can then catch up on production later that day or the next.



## 5. ADDITIONAL INTEGRATED INCENTIVE OPPORTUNITIES

In addition to Auto-DR Program incentives, there are several federal incentives available to customers. Here are brief descriptions of each. Remember, the total amount from all eligible incentive sources are subject to the project caps found above (see 3.14).

1. Additional qualifying equipment may be eligible for incentives as part of a qualifying Auto-DR project. Apart from Auto-DR, incentives for qualifying equipment may also be available through one of our Business Incentive programs.
2. Before submitting the Auto-DR installation documentation, make sure Energy Efficiency (EE) projects are already approved for payment
3. To be considered for Auto-DR, the program life cycle must be completed in sequential order

### SCE EE programs and incentives

EE incentives may be available for Auto-DR projects. While it's not required, we highly recommend that program participants include at least one EE measure.

Both prescriptive (deemed) and customized incentives are available. These include hundreds of measures for lighting, HVAC, motors, and other technology. For more information on our EE rebates, **visit [sce.com](http://sce.com)** (Your Business>Savings and Incentives>Energy Efficiency Customized Solutions).



## 6. PROGRAM ORGANIZATION

Those organizing the Auto-DR Program are responsible for managing incentive requests; handling invoices for payments; communicating with program-related vendors, customers, and account managers; and sending data to the CPUC

### 6.1 Program stakeholders

In order to implement the Auto-DR Program, it's vital that internal stakeholders and external parties regularly interact with select contractors (vendors).

#### 6.1.1 Internal stakeholders

The most important internal stakeholders include:

- ❑ Auto-DR Help Desk/Auto-DR Team: The Auto-DR Help Desk/Auto-DR Team reviews all program material for accuracy and completeness. It's the team's responsibility to assign work to the TC & PVE, as well as ensure all project submissions are entered & updated in our business tracking system.
- ❑ Accounts Payable: Accounts Payable is responsible for processing Incentive Payments to our Auto-DR participants
- ❑ Billing: Billing determines customers' credits, payments, & penalties based on performance during DR Events
- ❑ Program/Project Managers (PM): PMs manage & coordinate program services, budgets, and other resources. This includes monitoring and reporting performance goals. They're also responsible for developing program procedures and policies, as well as managing contractors and monitoring quality assurance.

- ❑ Accounts: Accounts handle customer and participant relationships, while promoting DR. The PMs train the sales and service representatives (i.e. account managers). They also provide necessary tools and marketing materials for DR Programs and Auto-DR Incentives.
- ❑ Performance Verification Engineer (PVE): PVEs perform a variety of tasks. They review & pre-approve energy management solutions, incentive applications, and Third-Party Project Proposals for Technology Incentives. They also conduct on-site M&V Testing for Technology Incentives.
- ❑ Technical Coordinator (TC): When fund reservations are confirmed for Auto-DR projects, we assign a TC. This expert ensures the Auto-DR hardware and software is installed correctly and functioning. They also provide training to ensure the customer understands the installed controls, the DR strategy, and the functionality so strategies can be updated. Upon our request, the TC will also offer customers technical support.

### 6.1.2 External stakeholders

Just some of the external stakeholders include:

- ❑ Other California Utilities: Our Auto-DR PMs join other California electric utilities for statewide teleconferences and forums year-round. By discussing DR Program issues and learning about best practices, these interactions help us improve our programs' performance and increase participant satisfaction.
- ❑ California Independent System Operator (CAISO): The CAISO manages the utility transmission system. When load reductions are needed during emergency conditions, CAISO issues alerts.
- ❑ California Public Utilities Commission (CPUC): The CPUC monitors overall utility performance related to DR Programs. These include budget performance and the effectiveness of reduction efforts during Events.
- ❑ Customers: Eligible non-residential ratepayers, applying for incentives through the Statewide Customized Offering
- ❑ Participant: Customers who have completed the enrollment process and have had projects approved for Program Incentives

## 6.2 Additional implementation contractors

Honeywell (formerly Akuacom) provides the communications infrastructure (DRAS) and connectivity support for our automated participants. Honeywell also maintains compliance with the OpenADR 2.0 National Communication Standards.



## 7. CONTACTS AND PROGRAMS INFORMATION

Automated Demand Response Technology Incentives: [on.sce.com/autodr](https://on.sce.com/autodr)

SCE Auto-DR Helpdesk: [AutoDR@sce.com](mailto:AutoDR@sce.com) or 1-866-238-3605

OpenADR Alliance: [openadr.org](https://openadr.org)

DRAS Self Service Module (SSM): [sce.openadr.com](https://sce.openadr.com)

SCE Online Application and Solutions Tools: [sceonlineapp.com](https://sceonlineapp.com)

Demand Response Programs: [sce.com/drp](https://sce.com/drp)

Southern California Edison: [sce.com](https://sce.com)

SCE Demand Response Alerts (smartphones) APP: [on.sce.com/scedralerts](https://on.sce.com/scedralerts)

Permanent Load Shifting (PLS or Thermal Energy Storage): [sce.com.pls](https://sce.com.pls)

PLS Helpdesk: [PLS@sce.com](mailto:PLS@sce.com) or 1-866-600-6289

Non-Residential Energy Efficiency Incentives: [sceonlineapp.com](https://sceonlineapp.com) > Solutions Directory

Customer Authorized Agents (CAA) Support: [caasupport.com](https://caasupport.com)

Contractor Information Center: [sce.com/contractor](https://sce.com/contractor)

SCE EnergyManager®, Bill Manager®, and Cost Manager®: [sce.com/energymanager](https://sce.com/energymanager)

24 Hour Emergency Services: Power Outages, Lines Down, etc... (CA. ONLY): 1-800-611-1911

General Customer Service (U.S. and Canada): 1-800-655-4555

Hearing and Speech Impaired (TDD) (CA. ONLY): 1-800-352-8580