**Existing or Pending IOU Integration Efforts (by IOU)**

June 2017

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| **Southern California Edison** |
| **Integration Effort** | **EE Program** | **EE End Use** | **EE/DR Control** | **Timing** | **DR Program(s) Connection** |
| Joint incentive in the form of a bill credit ($50 EE + $75 DR) for residential customers($50 SoCalGas) \* | * Residential plug load and appliance program
* possible midstream incentive via contractors
* Possible measure in whole house retro program
 | Air Conditioning | Smart Communicating Thermostat (T-stat) | Late 2017 | EE program markets PTR-ET-DLC to customer. Customer signs up and gets $75 DR incentive. Also pay-for-performance in DR events |
| Non-residential retrofit vendors with DR experience follow EE retrofit with DR control upgrade | Retro-commissioning program | HVAC, lighting | Energy management system | Ongoing on a case-by-case basis | Automated Demand Response (AutoDR) technology incentive program provided when EE retrofit is complete. AutoDR requires customer to enroll and participate in Qualifying DR Program for at least 36-months. |
| Online energy technology marketplace | NA | HVAC, plug loads, water heaters, pool pumps, hot tubs, EVs and more | Smart thermostats,advanced power strips, 220V load timers | 4Q 2017 as required by Res. E-4820 | Connected devices can be used for BYO device DR programs |
| **Under Consideration or Study** |
| Joint incentive for small and medium businesses | Commercial deemed program | Air conditioning | Smart communicating thermostat for non-residential | No work paper for T-stat | Capacity Bidding Program (CBP), Critical Peak Pricing (CPP), or Demand Response Auction Mechanism (DRAM) |
| Study of adding DR capabilities to new building controls | Non-residential New Construction and Savings by Design program | HVAC and lighting | Energy management system for new building with no energy use history | Small study currently underway  | Automated dispatchable lighting and HVACMay be able to participate in CBP, CPP, or DRAM |
| Integrate DR into Energy Upgrade California | Energy Upgrade California third party contractors who include this in their bids | HVAC, possibly other end uses such as pool pump | Thermostats and other home controls |  | Customers could participate in PTR-ET-DLC program with eligible devices/equipment |
| Integrate behavioral messaging  | Home energy reports for EE and DR events |  |  |  |  |
| Cloud-based control of multiple non-residential T-stats | Commercial Direct Install | HVAC units on separate T-stats | Control via a portal based on schedule or occupancy sensors (cloud platform serves as an “EMS-Lite” system but only for T-stats) | TBD (depending on CPUC guidance on To-Code Pilot) | N/A - Part of the EE To-code Pilot.Customer could also participate and earn DR program incentives if enrolled in the CBP, CPP, or DRAM |
| Cloud-based platforms and controls | N/A | HVAC, lighting | Cloud-based platform |  | Customer could also participate and earn DR program incentives if enrolled in the CBP, CPP, or DRAM |

\*SoCalGas incentive integrated into SCE incentive is ending at the end of 2017. This proposal is part of an AB 793 advice letter. It has temporary approval pending further Energy Division work paper review for the residential thermostat

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| **Pacific Gas & Electric** |
| **Integration Effort** | **EE Program** | **EE End Use** | **EE Control** | **Timing** | **DR Program(s) Connection** |
| Online integrated energy audits | Home Energy Checkup; Business Energy Checkup | Whole home or whole business | Various | Ongoing  | Referral to applicable DR programs |
| On-site Integrated Energy Audits | Integrated Demand Side Management (IDSM) | Whole home or whole business | Various | Ongoing  | Referral to applicable DR programs |
| Small-scale field study of EMTs combined with a Residential Mobile App | EE funding contributed to DR Emerging Tech program | Lighting, air conditioning, HVAC | Mobile App, various EMTs | Pending AB 793 advice letter approval, late 2017 RFP | Combined EE and DR study. Could in future enable participation in DR programs alongside EE savings.  |
| Automated demand response for commercial customers with EMTs | Coordinates with the Commercial Calculated EE program with the vendor performing the EE retrofit has DR experience | Various | Automated electric controls and strategies | Ongoing | Enables participation in DR programs such as PDP, DRAM and CBP |
| Energy Management Systems Assessment | Emerging Technologies | HVAC, Lighting, Plug Load | Integrated control systems | Currently in recruiting phase (10 SMB customers) | Assessment will also allow for potential applications in DR of control systems.  |
| Automated demand response for residential customers with EMTs | Residential plug load and appliance program, or Pay-for-Performance Program | Various (Pool pump, EV charging station, electric water heater, battery, air conditioning) | Automated electric controls and strategies | Late 2017 start | Integrates with DRAM, and SSII, XSP pilots |
| Smart Thermostat Joint EE/DR Incentive ($50 EE, $50 DR) | Residential plug load and appliance program | HVAC | Smart thermostats | 06/15/17 – 12/31/17 (work paper) | Smart thermostats enable participation in DR programs.  |
| Online energy technology marketplace[marketplace.PGE.com](http://marketplace.PGE.com) | NA | HVAC, plug loads, water heaters, pool pumps, hot tubs, EVs and more | Smart thermostats,advanced power strips, 220V load timers | 4Q 2017 as required by Res. E-4820 | Connected devices can be used for BYO device DR programs |

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| **San Diego Gas & Electric** |
| **Integration Effort** | **EE Program** | **EE End Use** | **EE/DR Control** | **Timing** | **DR Program(s) Connection** |
| $50 EE rebate for purchase, $50 DR incentive for network connectivity, potential for more based on usage | * Residential Plug Load and Appliance (PLA) program through Marketplace platform
* Looking to incorporate via Point of Sale (POS) program
* Also looking to incorporate into direct install programs such as MFEER, Comprehensive Mobile Home, Middle Income Direct Install programs
* Considering a low-income option later in 2017
 | Air conditioning | Programmable Communicating Thermostat (PCT) | DR is currently active, EE rebate anticipated June 29 |  |
| EE funds approximately 60% of the program and DR the remaining 40% | * Behavioral program, which compares consumption to similar homes. SDG&E has approximately 505,000 customers on the program, receiving electronic and/or paper reports. Customers are educated on EE and DR initiatives.
 | Behavioral | Shared program | Currently in place |  |
| EE is considering promoting smart/connected lighting to accompany the PCT offer. This is intended to introduce customers to the connected home space. | Lighting Innovation / Lighting Market Transformation | Smart / connected lighting | Potential for connected lighting to be utilized by customers during DR events | Anticipated Q3 2017 |  |
| Low Temp Refrigeration Phase Change Materials | Emerging Technology Energy Efficiency Program | Low Temp Refrigeration System | Refrigeration Controls Overlay for Compressor and Fan Staging<http://www.etcc-ca.com/reports/phase-change-material-and-controls-study-low-temp-refrigeration-applications> | Project Complete in 2016  | Emerging Technology Demand Response Program |
| Maintenance and Advanced Rooftop Controls | Emerging Technology Energy Efficiency Program | Commercial Package Units | Controls add-on for Commercial Package Units<http://www.etcc-ca.com/reports/maintenance-and-advanced-rooftop-controls> | Project Complete in 2016 | Emerging Technology Demand Response Program |
| Whole Home Energy Management System | Emerging Technology Energy Efficiency Program | Wide variety of residential end uses | Multiple end uses. | Project scheduled to be complete in Q4 of 2018 | Emerging Technology Demand Response Program |
| Wireless Lighting Controls - Automated Demand Response | Emerging Technology Energy Efficiency Program | Replacing existing T8’s with LED’s | LED Lighting<http://www.etcc-ca.com/reports/wireless-lighting-controls-automated-demand-response> | Project completed in 2016 | Emerging Technology Demand Response Program |
| Online energy technology marketplace[marketplace.SDGE.com](http://marketplace.SDGE.com) | NA | HVAC, plug loads, water heaters, pool pumps, hot tubs, EVs and more | Smart thermostats,advanced power strips, 220V load timers | 4Q 2017 as required by Res. E-4820 | Connected devices can be used for BYO device DR programs |

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| **Under Consideration or Study SDG&E** |
| Small Commercial Energy Management System | Emerging Technology Energy Efficiency Program | To Be Determined – Generally targeting major end uses | To Be Determined | TBD | Emerging Technology Demand Response Program |
| Advanced Lighting Controls Calculator - Field Evaluation | Emerging Technology Energy Efficiency Program | Lighting | Lighting dimming and control based on sensors | TBD | Emerging Technology Demand Response Program |