

# PG&E AutoDR Program

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Senior Program Manager



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# Agenda

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- **ADR Program Overview**
- **2013-2014 Incentives**
- **2.0A and 2.0B projects**
- **Case Studies**
- **OpenADR 2.0 impacts on project design**



# ADR Program Team

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*Pacific Gas and  
Electric Company®*

- Core Program management
  - Fred Yoo, PG&E

E N E R G Y  O L U T I O N S



- Program Implementers



- Technical Advisor



- DRAS Administrator



# AutoDR Program

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- **Pays incentive to help install controls that enable automation**
- **Incentives range from \$200 to \$400**
- **Pays up to 100% of the project cost**
- **Incentive is paid in two installments**
- **Provides technical assistance**



# Eligibility

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- **PG&E interval meter installed at the site**
- **Have an existing Utility service account with at least 12 months of billing and usage history**
- **Either already enrolled in one of qualifying DR programs or eligible to enroll**
- **Client must be 2.0 A or B certified**



# Incentive Structure

Technology Category	Incentive Rate (\$/dispatchable kW)
Automated Demand Response	\$200
Advanced Technology HVAC	\$350
Advanced Technology Lighting	\$400

- Incentives paid based on calculated kW peak load reduction
  - 1<sup>st</sup> Payment: 60% after equipment is installed, inspected and tested
  - 2<sup>nd</sup> Payment: up to 40% depending on event day performance relative to paid kW load reduction, after full DR season



# Incentives Remaining for 2014

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Total remaining incentives: \$9,741,621

Note: Projects must be installed by October 31, 2014 to receive 2013-2014 incentives



## 2.0A or 2.0B Projects

Customer Type	Project Type	2.0A or 2.0B Profile	MW	Incentive	Project Status
Industrial	Water Pumping	2.0A	9.25	\$ 1,850,000	In Progress
Retail	HVAC and Lights	2.0A	4.287	\$ 823,800	In Progress
Retail	HVAC	2.0A	2.003	\$ 701,050	Installed
Agriculture	Water Pumping	2.0B	2	\$ 400,000	In Progress
Agriculture	Water Pumping	2.0A	0.997	\$ 199,400	Installed
Agriculture	Water Pumping	2.0B	0.449	\$ 89,800	In Progress
Retail	HVAC	2.0B	0.250	\$ 50,000	In Progress
Commercial	HVAC	2.0A	0.2194	\$ 77,350	In Progress
Agriculture	Manufacturing	2.0A	0.21	\$ 42,000	In Progress
Agriculture	Water Pumping	2.0A	0.191	\$ 38,200	Installed
Retail	HVAC	2.0A	0.163	\$ 57,050	In Progress





# Program Website

For up-to-date program information visit:  
[www.pge-adr.com](http://www.pge-adr.com)

## ADR

Automated Demand  
Response Program

A program of:



Pacific Gas and  
Electric Company

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Questions? Call now 510-550-8513

*The ADR Incentive Program makes it easy for customers to participate successfully in Demand Response Events.*

The Automated Demand Response (ADR) Program provides **incentives** and **technical assistance** for customers investing in energy management controls that also enable demand response (DR).

## INCENTIVES

Technology Category	Incentive Rate (\$ per kW of load shed)
Semi-Automated Demand Response	\$125
Automated Demand Response	\$200
Advanced Technology HVAC/R	\$350
Advanced Technology Lighting	\$400

ADR encourages customers to expand their energy management capabilities by participating in DR programs using automated electric controls and management strategies.

## ACHIEVEMENTS

65 MW Peak Load Reduction Goal

18.35 MW

7 MW Advanced Technology Goal

2.84 MW

## INCENTIVES AVAILABLE

Peak Day Pricing Plan

\$4,667,333 available

Aggregator Managed Portfolio

\$1,010,771 available

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# **PG&E ADR PROGRAM: CASE STUDIES**

## CASE STUDY 1:

# Retail Package HVAC Cycling

- Large Retail Chain
  - 30 stores throughout Northern California
  - On-site facility management not available to perform DR
- kW Curtailment Strategy
  - 420 Roof-top HVAC units (RTUs) controlled
    - RTU fans remain on 100%
    - Compressors cycle on/off at 50% of baseline duty cycle
  - Curtailment kW is 20 – 30% of on-peak average
    - According to the CA Commercial End-Use Survey, cooling alone represents **52%** of Retail on-peak load

## CASE STUDY 1:

# Retail Package HVAC Cycling

- PG&E Integrated Demand-Side Management (IDSM) installation incentives
  - IDSM = ADR plus Energy Efficiency (EE)
  - AutoDR enabling technology incentives: \$567,000
    - 1,620 kW curtailment at \$350 per kW
  - PG&E Commercial Catalog Rebates for Plug Load Sensors
    - Received rebates as part of separate retrofit project; qualified these 30 store for IDSM ADR funding
- Combined incentives are greater than project cost
  - Customer pays only the ADR-ineligible cost of meter monitoring equipment: \$50,000.

## CASE STUDY 1:

# Retail Package HVAC Cycling

- Ongoing DR program Benefits
  - Depend on the DR program enrollment:
    - AMP and CBP payments are based on the aggregator-customer bilateral contract
    - DBP payments are \$0.50 per kWh
    - PDP benefit is avoidance of \$1.20 per kWh event rate (\$1.04 / kWh higher than typical on-peak kWh)
  - For the purposes of this case study, we'll use the \$1.04 PDP avoided cost figure.
- Ongoing EE benefits: \$102,000 in annual kWh savings from improved RTU scheduling

CASE STUDY 1:

# Retail Package HVAC Cycling

- Pre-Installation Project Financials

	Initial Customer Cost	Annual Scheduling Cost Savings	PDP Annual Avoided Cost	Total Annual Cost Savings	Payback (months)
Based on 1,620 kW pre-season DR estimate	\$50,000	\$102,438	\$80,674	\$183,112	3.3

## CASE STUDY 1:

# Retail Package HVAC Cycling

- ADR curtailment has been 18% above estimates to-date, further improving the financials:

	Initial Customer Cost	Annual Scheduling Cost Savings	PDP Annual Avoided Cost	Total Annual Cost Savings	Payback (months)
Based on 1,620 kW pre-season DR estimate	\$50,000	\$102,438	\$80,674	\$183,112	3.3
Based on 1,904 kW DR performance to-date	\$50,000	\$102,438	\$94,836	\$197,274	3.0

## CASE STUDY 2:

# Agricultural Water Pumping

- Auto-DR Measure
  - Turn off pump
- Eligible equipment costs
  - Remote pump start/Auto-restart/Stop Control
  - Pumpsite Automation Controller (PAC)



## CASE STUDY 2:

# Agricultural Water Pumping

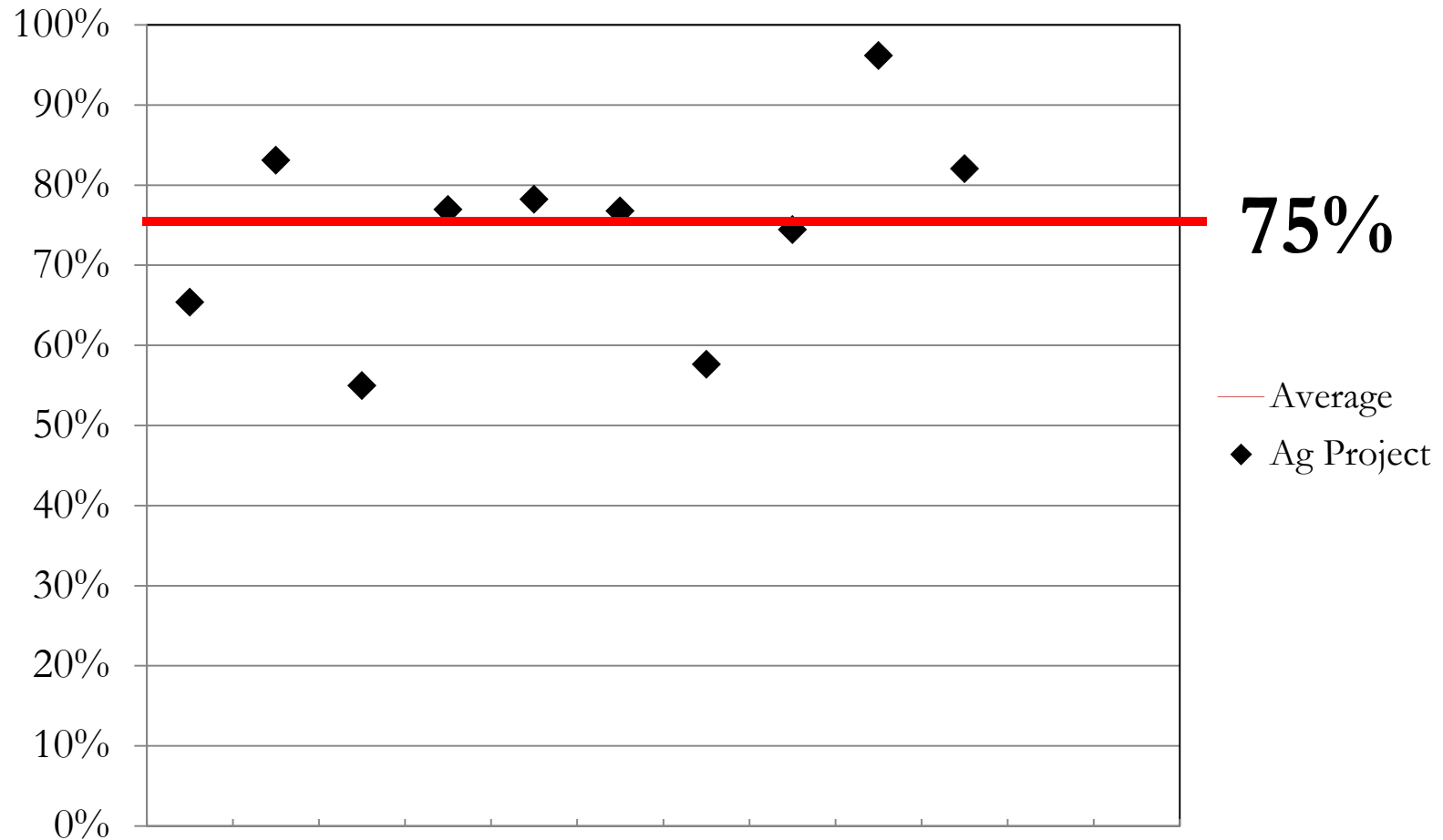
- Project Motivation
  - Reduce labor during DR events
  - Additional revenue for the farmer
  - Increased controls to manage electricity and water costs
  - Reduced costs through central tool to monitor irrigation information and automate pump operations year round

## CASE STUDY 2:

# Agricultural Water Pumping

- 10 Projects
- 5.15 MW Approved
- \$1,030,000 incentive dollars reserved
- Each project averaged about 350 kW load shed

# Percentage of Project Cost Covered by ADR Incentive



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# OPENADR 2.0 IMPACTS ON PROJECT DESIGN

# Simplified Measure Qualification

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- Technology vendors have clear guidelines on communication standard between utility and client
- OpenADR creates the technical communication guidelines
- OpenADR creates the testing framework
- Utility knows each client will meet minimum communication expectations
- Vendors know their equipment is eligible for a variety of programs across the country

# Stranded Asset

