HergyHub

2016 Demand Response End of Year Review

February 2017

*EnergyHub

EnergyHub Confidential

EnergyHub is the connected home solution for utilities



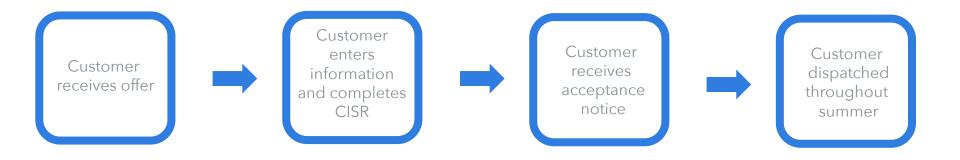
Major DRAM successes in 2016

- Robust and diverse third-party participation in DRAM auction
- Third-party integration into the CAISO wholesale market
- High level of interest expressed by residential customers in program participation

Major DRAM challenges in 2016

- Initial delays in launching program
 - CISR form and DRP agreement not ready with sufficient time before program launch
- Significant time lags (with CAISO and IOUs) and inefficient data exchange
- Complex and onerous CISR process

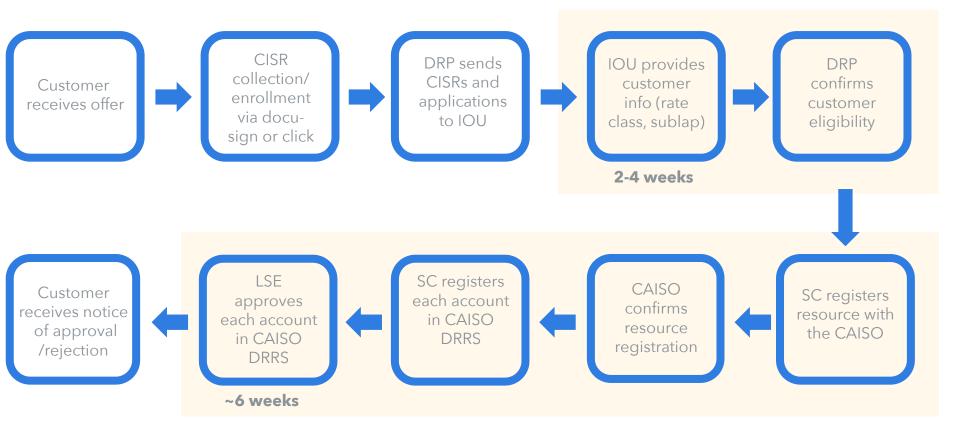
DRAM program customer journey (simplified)



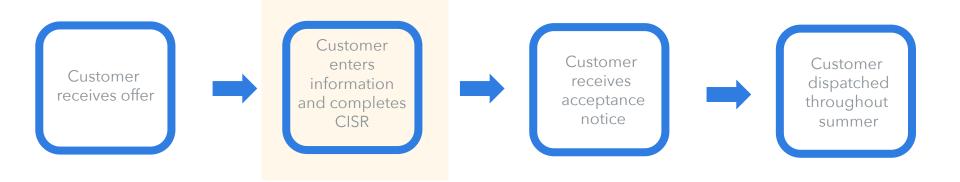
DRAM program customer journey (simplified)



DRAM enrollment process



DRAM program customer journey (simplified)



CISR process problems impair customer experience

- Customers don't have their account number readily available
- Multiple enrollment steps and clicks create customer fatigue (SCE GBC is 10-12 screens)
- Customers redirected away from DRP site
- Third party e-signature services are difficult to use and very expensive

What happened to all the customers?

enrollment steps

Customer receives offer	100%
Customer engages with offer	~40-60%
Customer agrees to participate and provides SA number	17%
Customer signs CISR	9%

Customer applications submitted to IOU

final determination

Accepted	5.3%
Rejected	3.3%
Rejected CISR	1.1%
Wrong sublap	0.4%
Program conflict	1.3%
Late application	0.5%

Potential improvements discussed in click-through WG with some agreement among parties

- More efficient data exchange between DRP and IOU for customer eligibility and event result meter data
- Reduced number of "clicks"
 - DRP populated date range and SA autofill
 - One check click-through authorization
- Visually clearer and more concise CISR process
 - Maximum of two screens
 - Streamlined language: summary of data elements
- Dual authorization
- Some performance metric reporting

Some important considerations for DRAM 2018-2019

- Elements required for GBC development in addition to effective implementation of those mentioned in previous slide
 - Stage place for testing
 - Mobile capability
 - Alternative authentication credentials
- Customer registrations limits cannot disqualify DRAM customer applications
- Data items must be provided by IOUs free of charge to DRPs
- Streamline and digitize the moving of customers from different programs into and out of DRAM
- All GBC updates need to be finalized by Q3 2017
- Need a pathway to a DRP designed solution

New market opportunity for residential customers

- PG&E proposed residential customers be included in CBP in 2018-2020 DR application
 - Some implementation details need to be ironed out
 - BAWG recommended CAISO baseline
 - Appropriate duration for events
 - Other IOUs should also consider this proposal
- We support SDG&E proposal to create WSL WG to optimize integrating residential AC into the market
- All IOUs propose adding residential to ADR incentives

Appendix

PG&E enrollment flow (customer perspective)

		THOR SAME IN THE MAR	_		_
Great, you may be eligible to participate in PeakPerks CAI		A Rard Copy via US Mail:			-1
Email Address		Secured email (may be different than e-mail address		Des 1 Des 1	
Enter your email address. This must be the same email you use to access your Sensi thermostat.		listed on Page 1), or secure electronic format via a secured data transmission platform (e.g. ESFT		<i>PeakPerks</i> sen si	
Email Address		file).			
Your Name and Address		URISDICTION OF CPUC his agreement at all times shall be subject to such modifications and access to information as the			-
Please provide your name and the address of the location where you receive electric service. Note: Your entry MUST match what's on file for your electric utility account.		alifornia Public Utilities Commission may direct from time to time in the exercise of its jurisdiction.		Hi	
First Name Last Name		CUSTOMER AUTHORIZATION (Customer), declare under penalty of perjury under the laws of the State of California that I am		Welcome to PeakPerks CA!	
Street Address	aut	uthorized to execute this agreement on behalf of the Customer of Record listed at the top of this form			
City State Zp Phone Number	righ	nd that I have authority to financially bind the Customer of Record. I understand PG&E reserves the ght to verify any authorization request submitted before releasing information or taking any action on		Your application to PeakPerks CA has been accepted.	
Is this also your mailing address?		ny behalf. I authorize PG&E to release the requested information specified in Sections A and B for ny Service Agreement(s) to the above-designated DRP(s). I hereby release, hold harmless, and		If you have any questions about this program or your enrollment, please	
Yes No		idemnify PG&E from any liability, claims, demands, and causes of action, damages, or expenses asulting from: (1) any release of information to the DRP(s) pursuant to this Authorization; (2) the		contact <u>ca-north@energyhub.com</u> .	
Your Service Agreement ID		nauthorized use of this information by the DRP(s); and (3) any actions taken by the DRP(s) pursuant		contact <u>cartorn@energynub.com</u> .	
Please provide your Service Agreement ID to enroll in this program. This ID is found on your electric bill.		b this Authorization. I understand that I may cancel this Authorization at any time by submitting a avocation request using this same form.		Thanks.	
Electric Service Agreement ID	164	Sign		- That may	
Format 222222222 Dottails of (Elsectric Changes Od+112015 - 0000/2015 (20 bling daps) Ferror Listing Transmit		Authorized Signature of Customer Date Signed (mm/dd/yyyy)		The Sensi Team	
dence la severa () 20000000	G. FIR	IRST DRP'S ACCEPTANCE OF CUSTOMER RELEASE PROVISION			
Customer Enrollment Agreement	i, (i	(First DRP), hereby release, hold harmless, and indemnify PG&E from any liability, claims, demand,	-		_
Please check the field below to indicate that you agree, accept, and acknowledge the terms set forth below in the Terms &		auses of action, damages, or expenses resulting from the use of customer information obtained ursuant to this Authorization.			-1
Conditions.	pu	02/11/2016		You received this email because you are enrolled in PeakPerks CA. Add ca-	
I agree to the Terms & Conditions, including the Official Rules.		Kobol W Hule		north@energyhub.com to your address book to receive all program-related emails	
Submit		Authorized Signature of First DRP Date Signed (mm/dd/yyyy)		EnergyHub 232 3rd Street, Suite C201 Brooklyn, NY 11215	

Enter name, address, email SA ID Use DocuSign for e-signature; 6 clicks, 2 signatures Receive notice of acceptance/rejection

SCE enrollment flow (customer perspective)

Before you begin We are about to sufficient the strains of your usage data with Prime Alasa Thermonatal Accept https: you mgin files to brook before geing statistic:	
Filtrete / Radio Thermostat	
Terms & Conditions Terms in a characteristic in the INC: The Prop Ingenerator Name & Section 2019 (Section 2019) Terms and the Section 2019 (Section 2019) Terms and Section 2019 (Section 2019) Terms and Section 2019 Terms and Section 2019	-
Deventeed CRR Prem (PCD) This can devented in authorization (SHR) form and other mail, for or small b Control + Control +	

Ciliante /	Badio Thermostat			
-intere /	nadio memosiai			
Start D	Date			
Your data will	be available to the third	party vendor immediatel	y upon authorization.	
Duratio				
	ON d date or duration through	a subjects some same det likes be	authorize the third	
party vendor	to have access to your da	ita:	and the second	
40 30 days	(Estimated: Mar 18th,	2014)		1
40 00 days	(Estimated: Apr 18th,	2014)		
40 90 days	(Estimated: May 18th,	2014)		K
(1) Select A	In End Date	•		
	Date (Indefinitely)			L
4c No End				

Select third party, SA IDs, data types and duration



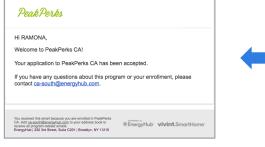
Sign In Email Address

Lise and Privacy Policy

Keep me signed in
Forpot your password?

New to Filtrate wireless thermostats?
Create an account

By clicking the "Sign In" button below, you agree to EnergyHub Terms of



Receive notice of acceptance/rejection

Complete authorization once redirected back to SCE