

ET Summit 2023

Presented by



SCE Flick Power Study

Using Pre-Attentive Color Schemes to Enhance
Responsiveness to Time of Use Electric (TOU) Rates



Mark Martinez
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Southern California Edison

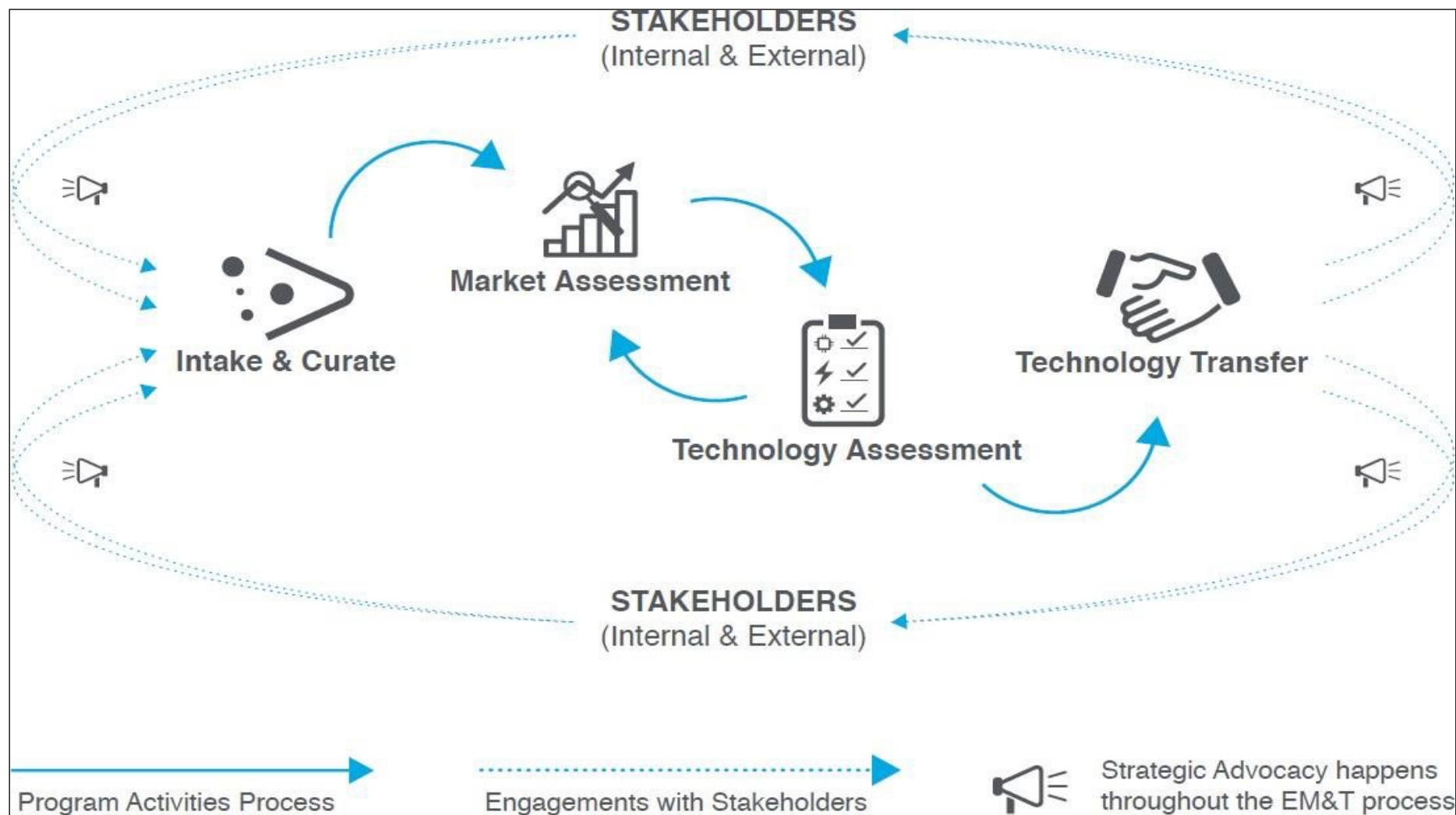
Andre Ramirez
Founder
Flick Power



The SCE Emerging Markets and Technology Program

- Mission
 - *To identify, assess, and deliver* emerging, technology-driven demand response (DR) measures that enhance customer engagement of DR programs and tariffs.
- Research Priorities and Focus
 - *Discover new DR trends*, benchmark with other IOUs and munies, and drive DR innovation in the product markets that are engaged in DR programs in California.
 - *Assess and communicate* with internal teams and external stakeholders for technology transfer and information sharing of findings and best practices.
 - *Deliver emerging technology opportunities* for today's program needs and SCE's future vision of rate design and grid modernization (Pathway 2045).
- Funding and Present State
 - Current funding by the California Public Utilities Commission for 2023 is \$4.2M as part of the DR program portfolio bridge funding authorization (Category 4) – 2024-2027 pending.

EM&T Program's Overall Investment Approach



California Statewide Collaboration of DR Research

- California's Demand Response Emerging Technologies (DRET) programs fund research on advancing innovative enabling technologies and consumer products that can enhance customer participation in IOU DR programs.
- The three DRET programs are each administrated separately by Southern California Edison (SCE), Pacific Gas & Electric (PG&E), and San Diego Gas & Electric (SDG&E).
- The three IOUs share their studies and results and other relevant resources via the DRET collaboration web site at www.dret-ca.com and also hold webinars and present at hybrid conferences throughout the year.

DRET DEMAND RESPONSE
EMERGING TECHNOLOGIES

ABOUT DRET RESEARCH RESEARCH AREAS COMPLIANCE RESOURCES

WELCOME TO DRET

The DRET collaborative is a forum for the sharing of information and facilitating technology transfer of the market assessments and pilot research designed to accelerate the market adoption of emerging demand response enabling technologies in all customer sectors to meet California's electric reliability and climate goals.

The DRET collaborative benefits electricity ratepayers from the state's three largest investor-owned utilities - Pacific Gas and Electric Company, Southern California Edison, and San Diego Gas & Electric Company and is authorized by the California Public Utilities Commission (CPUC) through 2023.

[Learn More](#)

FEATURED DRET RESEARCH

EMERGING CLEAN ENERGY IN DEMAND-ENABLED COMMUNITIES WITH INTEGRATED PV-4 STORAGE
Technology Innovations

SCE Dynamic Rate Pilot

ETCC Webinar: DRET Program Updates
Date: April 25, 2023

SCE has received the EPRI Technology Transfer Award for Innovative Research

Engaging Customers in Demand Response through Transactive Energy Pricing

California Demand Response Emerging Technologies Update

Flick Power Proposal – Demand Flexibility

US ELECTRIC BILLS HAVE INCREASED 25% (SINCE JAN 2020)

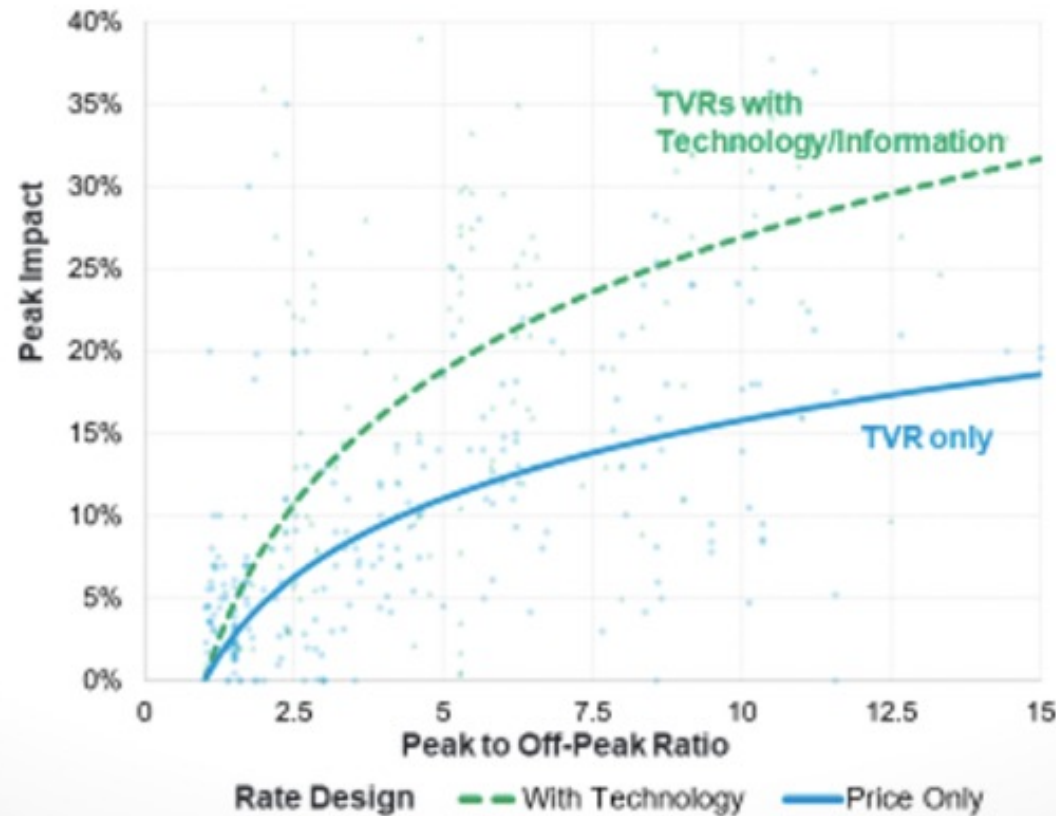
Savings opportunities can be expensive, complicated and often *don't reach apartment communities.*

- Split incentive problem
- No property-wide managed WiFi
- Older building stock & infrastructure
- CA Statewide surveys consistently find lower income customers are 30% less aware about TOU signals & programs



Sources: eia.gov; Assessment of National and Metropolitan Energy Burden across the United States. ACEEE. Sept. 2020

400+ Separate Global Trials Prove Signaling Technology Enhances Response vs Time-Varying Rates Alone



Remember the Orb!

SDGE Energy Orb
Flex Your Power NOW!

Congratulations on your new Energy Orb!
The Energy Orb is a new feature for your Smart Shift and Save Pricing Plan. The color of the Energy Orb tells you what pricing period we are currently in: Blue for Off-Peak, Green for On-Peak, and Red for Super Peak. The Energy Orb will flash red 4 hours prior to a Super Peak event and remain solid red through the event.

- Blue:** Off Peak - 7pm to 2pm - Lowest Price Period
- Green:** On Peak - 2pm to 7pm on Week days - Higher Price Period - Try to limit electricity usage
- Red:** Super Peak - A 2 or 5 hour period between the hours of 2pm and 7pm during Super Peak events only - Highest Prices - Reduce electricity usage

Source: The Brattle Group

Solution – Device Created to Serve All Building Types

- New device eliminates the need for wiring and avoids electrician costs.
- Battery-powered for up to 450 days, with batteries to be replaced during annual maintenance visits.**
- Long-range wide area network “LoRa WAN” connected to a cellular internet connection allows for reliable signal and provides enough bandwidth to collect temperature & humidity data and change pre-loaded signals on the device.

** Redesign underway to eliminate the need to replace batteries using newer innovations

Flick Promotes Affordability, Energy Awareness & Cost Savings to Previously Overlooked Communities



5%

Estimated energy bill savings from EE & load shifting informed by previous trials & other known tactics.



No WiFi, or wiring required with installation in minutes.



Message center and temperature & humidity tracking help property management improve resident experience.



92%

OF PARTICIPATING RESIDENTS WERE PLEASED THAT MANAGEMENT INSTALLED THE FLICK SWITCH TO HELP GROW BOTH AWARENESS & SAVINGS.



83%

of Flick users reported the switch influenced how often they thought about energy & consumption.



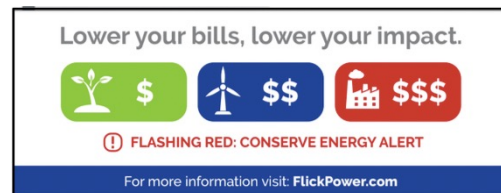
American Campus Communities, the nation's largest developer, owner and manager of high-quality student housing apartment communities hosted a case study of Flick In Irvine, CA.

217 apartment units of the Vista Del Campo Norte community were outfitted with Flick prior to resident move-in.

SCE Sponsored Pilot

Phase 1

- Evaluating Generation 1 Wi-Fi Light Switches
- Previously installed in 220 student housing units in Irvine, CA.
- Basic red, blue, green color signals.
- Load impact & survey research



Phase 2

- Evaluating Gen 2 messaging technology
- ### to be installed in similar student housing setting.
- On-peak 'red' signals
- TBD messaging and engagement button testing
- Load impact & survey research
- Temp & humidity tracking



Thank you



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