

California Customer Choice Project

California Public Utilities Commission

Post Workshop #1 Questions: White Paper Scoping Questions

The California Customer Choice project has three principles and eight key questions when considering customer choice in California and other markets. Principles:

- *Affordability: Design Rates and Charges So That Bills Are Affordable*
- *Decarbonization: Meet California's Environmental and Climate Goals*
- *Reliability: Maintain Safety, Reliability, and Resiliency of Electricity Services*

It is important to keep in mind the tradeoffs among the principles. For many desirable reasons, California has extremely aggressive decarbonization goals. However, as was discussed at length at the recent CAISO Stakeholder Symposium, a single state cannot achieve larger climate goals on its own and regional solutions are needed for the best possible impact. In addition, market forces coupled with policies that place nuclear generation lower in the priority queue, have meant that a significant portion of zero carbon generation will be taken out of the mix. If California tries to shift too quickly to all renewables, the state will no longer have a reliable supply of electricity or water (for pumping), especially at night and in the early morning. From an affordability perspective, there is more to the equation than the declining cost of solar panels and micro projects financed by individuals or non-profits. Energy storage at scale will be critical to maintain reliability, resilience, and affordability—yet we are still in the early stages and market policies that enable financing and profitable operation are needed to bring these resources online.

Are there any additional questions that the project should be considering? Why?

We recommend expanding discussion of **public safety** as a consideration beyond safe operation of the utilities. As communities expand the use of batteries and rooftop solar, what will be the impact on first responders and neighbors when there are fires on the prosumers' premises?¹ If significant numbers of people are dependent on all-electric vehicles (as opposed to hybrids) and electric service is disrupted during an earthquake, regional fire, terrorist attack, or major storm; how will people evacuate safely if their vehicles are not fully charged and the designated safe destination is beyond their mileage range? What will be the impact if in preparation for an anticipated storm, EV drivers abandon their normal patterns and everyone is charging simultaneously? Will there need to be priority charging locations for electrified buses, trucks, and emergency equipment?

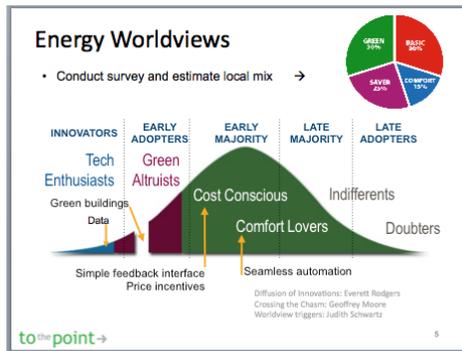
Key Questions in Considering Customer Choice

Question 1: How does this choice model ensure consumer protections?

Making customer choice primarily about suppliers misses an essential point about options and choice. Having portfolios of payment and pricing plans, technology and behavior choices, are just as important (if not more) to consumers as the generation mix. The legislature and CPUC must realize that even in a state as progressive as California, millions of citizens prioritize affordability and decarbonization differently and few are well-informed about which choices would impact reliability. The American public takes stable, commodity electric service for granted—people just expect the lights to go on when they flip the switch 24 x 7. Both the grid and consumers will be better protected if there is room for more than a single path for participation. Not everyone can afford or wants to be a prosumer any more than everyone will grow their own food in a backyard or community garden.

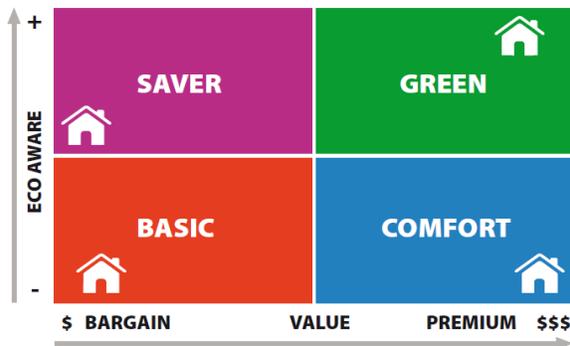
¹ <https://www.wired.com/2017/05/rooftop-solar-panels-great-planet-terrible-firefighters/>
<https://www.scientificamerican.com/article/battery-fires-pose-new-risks-to-firefighters/>
<http://www.genre.com/knowledge/publications/pmint1709-1-en.html>

Alternative paths are needed



Research studies consistently confirm motivational segments or “Energy Worldviews” are more predictive of consumer behavior than traditional demographics when it comes to energy usage. It is a straightforward process to measure the percentage mix within a service area, ask people to self-identify to obtain the range of perspectives in co-creation design sessions; and apply these concepts to interfaces, messaging, and program options so residents feel their priorities are respected.

Simple choices, bundles, and engagement paths



Customer Engagement

| | PASSIVE | ACTIVE | SET & FORGET | UTILITY AUTOMATION | ENERGY PARTNERS |
|----------------|---------|--------|--------------|--------------------|-----------------|
| BASIC | ● | ● | | | |
| COMFORT | ● | ● | ● | ● | |
| SAVER | | ● | ● | ● | ● |
| GREEN | | ● | ● | ● | ● |

C&I customers balance cost with impact



Customer Engagement

| | PASSIVE | ACTIVE | SET & FORGET | REMOTE AUTOMATION | ENERGY PARTNERS |
|--------------------|---------|--------|--------------|-------------------|-----------------|
| STEADY | ● | ● | ● | | |
| COOL | ● | ● | ● | | ● |
| ADAPTABLE | | ● | ● | ● | ● |
| SUSTAINABLE | | ● | ● | ● | ● |

Question 2: How does this choice model support development and incorporation of innovations driven by customer demand?

Consumers have demonstrated they will invest on their own in innovative products that capture their imaginations—even when those products are not the lowest cost options (early solar installations, Tesla cars, Nest thermostats to name a few). Companies that successfully create “objects of desire” are one path. Another driver is anger at perceived failures by IOUs. The real failure to offer choices (rates, payment plans, technology) available to consumers based on THEIR priorities has fueled interest in CCAs. The irony is that all three IOUs have a range of options and are investing in renewables yet the utilities simply have not presented the alternatives to customers in ways most residents can understand. Research supports that when people do start signing up for programs that match their priorities, they choose additional services and have a higher rate of satisfaction.

Question 3: Does this choice model ensure universal electric service?

For me, the best panel at the workshop was *Core Principles* particularly Laura Wisland, Mark Joseph, and Matt Freedman because they clearly care about the positive aspirational goals yet were realistic and grounded by what had happened in the previous attempt to deregulate California energy markets. In my opinion, they are correct that:

- Our modern society will continue to require a broad mix of generation sources to flourish;
- Millions of people will be left with inferior service and higher bills if policies are optimized for people who can afford time, bandwidth, and money to be prosumers benefiting THEIR families and businesses at the expense of everyone else;
- CCAs only have to deliver a sliver of services and infrastructure compared to incumbent utilities yet are incentivized to skim off solvent consumers:

The main reason to be skeptical about CCAs as a panacea is that utilities will continue to be responsible for the heavy lifting including keeping all the infrastructure in good repair, outage detection and restoration, and serving customers dependent on a mix of energy efficiency and assistance programs and the indigent (who routinely cannot pay bills and participate in arrearage programs). Romantic and aspirational visions can be inspiring and encourage innovation but at the end of the day, providing this necessary resource to everyone requires practical execution and deep pockets.

Question 4: How does the choice model leverage investment necessary to finance the evolution of the electric grid?

A municipal utility like City of Palo Alto Utility is viewed as a model for many cities choosing CCAs. (Disclaimer: I am a Commissioner on the Palo Alto Utility Advisory Commission and the opinions I am expressing are my own and not the opinion of CPAU or the UAC). Palo Alto has the luxury of allowing others, primarily PG&E, to take responsibility for delivering electricity 24x7 to our city while claiming a carbon neutral energy supply. To make this claim, CPAU purchases RECs to offset usage when our remote contracted renewable projects are not actually providing the electrons used by our citizens. CCAs claiming 100% renewable supplies are in the same situation.

So, while Palo Alto and CCAs contribute financially to the expansion of renewable generation, the lack of recognition of real-time matching supply with demand masks what infrastructure investments are really needed.

For example, unlike most of the state, Palo Alto does not yet have smart grid or interval meters so we are limited in how responsive residents can be relative to fluctuating demand and supply except for voluntary measures not supported by automation technology or information. Also, Palo Alto currently has a single transmission bottleneck to the City (Colorado Substation) and is dependent on PG&E to repair any service disruption on the transmission lines. As we learned a few years ago when three Tesla engineers died when their small plane hit a transmission line near the Palo Alto Airport, the entire City was without power until PG&E came to the rescue. If the plane had destroyed the substation, the lead time to obtain replacement equipment would have crippled the City for an extended period. As a Commissioner, I am encouraging the City Council to direct CPAU to share more responsibility with PG&E and invest in back up equipment, storage, and a second transmission line.

Question 5: How does this choice model consider the transition of utility obligations?

I don't think it does. What liabilities are being taken off the IOUs' plate? CCAs market to customers and buy power from independent power producers and aggregators. If we are asking the utilities to be responsible for everything else, then even though the CCAs pay fees, it takes a lot more than that to deliver services. If there is a serious regional disruption of service, is it fair to say the utilities cannot restore power to their own customers first?

Question 6: Does this choice model have competitively neutral rules among market participants?

To ask IOUs to comply with an exhaustive range of rules and obligations and not require the CCAs to do the same does not make a level playing field.

Question 7: Can customers determine their level of participation and are they informed to participate at their desired level?

Customers should be allowed to determine their level of participation. Options need to be there from utilities and any authorized service providers but consumers need education and guidance to figure out the optimum path for their situation. We have seen in jurisdictions across North America that when the utilities do a good job of LISTENING to their customers and partnering with Community Based Organizations and social service agencies, the process works. SDG&E has been the leader in this area because their programs also recognize the need to financially support the CBOs who are serving as conduits to distinct constituencies.

Question 8: How does this choice model impact and benefit local communities? The California Customer Choice Project is reviewing several markets as key examples of how customer choice operates under different regulatory frameworks. These markets include:

• **New York**

The NY REV process focus on “animating markets” has led to very exciting discussions and conversations in the industry. It’s also unproven and AMI is in early stages in just a few locations. California is in a very different place and while we can glean ideas from the REV process including some interesting low income DER experiments in urban areas, it is questionable to view them as a model to follow.

• **Texas**

As someone who studies best practices in consumer engagement in my professional practice, I find the Texas model to be overwhelming to many consumers. People change suppliers frequently because of incentives or clever promotions—not because those providers are necessarily delivering decarbonized or more affordable service.

An example of a Texas retailer that creatively addresses low income consumers is Direct Energy. Direct Energy’s Neighbor-to-Neighbor program provides assistance to Texas families struggling to pay their monthly bills. In 2017, Direct Energy made a donation of \$700,000 on behalf of our customers to over 30 local assistance agencies. Now, Direct Energy is working with Gridmates to bring customers together to help alleviate energy poverty with a goal of raising an additional \$25,000. While this is still small scale it is an idea with potential.

<https://directenergy.gridmates.com/>

• **Illinois**

SEE NEW YORK

Are there other markets, either domestic or international, that you think would be an important model for California to consider as a regulatory framework option? Why?

Germany

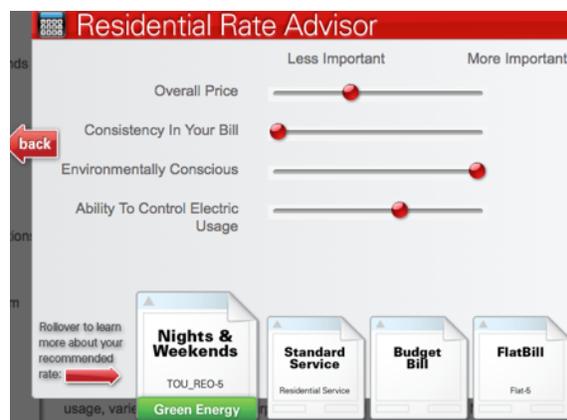
The most profound moment for me at the workshop was when President Picker was genuinely asking the panels what they thought should be done to address these issues. The CPUC is legitimately concerned that legislative initiatives responsive to organized groups championing 100% renewables will turn out to NOT be the right path. I think the lesson from Germany is that if you dramatically undercut nuclear and natural gas too aggressively and prematurely, you end up with coal to fill in the gaps. These were unintended consequences of a well-intentioned initiative.

Georgia

Southern Company's motto is "Innovation at the speed of value." Georgia Power, in particular among the company's holdings—working in collaboration with their far-sighted commission—is a leading example of a utility that offers choices based on customer priorities and cash flow concerns. Customers who value predictability can pick rate plans that give them some certainty with hedged rates while others willing to adjust their schedules can choose time variant rates. One lesson for California is that even if customers will be defaulted onto TOU rates, it will be critical to customer acceptance to encourage and allow alternatives. Georgia Power is conducting a phased rollout of a very popular and successful prepay payment plan (open to customers at all income levels). The biggest limitation on adoption speed is getting the necessary equipment into specific neighborhoods.

Georgia Power developed tools like the slider bars at right encourage people to volunteer information about priorities (without feeling unnecessarily restricted²), research or self-select which plan would work best for them. Service reps, community partners, and social service advocates help customers evaluate alternatives.

In addition to pricing plans, different customers favor different payment arrangements: auto-deduction, prepay (with discount), online, mobile payment, check mailed, in-person payment, etc. There are also apps (and more on the way) that allow people to monetize either their information or participation.



3) What published resources do you recommend the California Customer Choice team review in addressing key questions for evaluated markets?

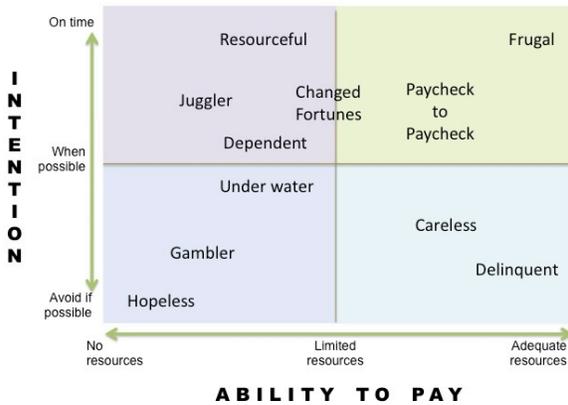
Lessons from Other Industries Case Studies, 2016 and *Innovations in Low Income Consumer Engagement, 2017*; and *2017 State of Community Solar Benefitting Underserved Residents*, are meta-analyses published by the Low Income Energy Issues Forum (LIEIF), DEFG. They examine issues critical to choice in the context of low income communities.

We bring to your attention a model used in all three studies that recognizes that within the third of California families who meet the eligibility requirements for assistance, there are significant variations that directly affect how these customers can make choices. This model emerged from conversations at LIEIF workshops with varied participants (consumer and environmental advocates, utility program designers and collections managers, product specialists, and consultants. The group recognized that peoples' ability to pay had a profound effect on their receptivity to various rules and requirements. If one goal of utilities is to motivate low income customers to lower their costs of service and improve their ability to pay, then a different perspective is needed.

We have found this model is readily understood and people are able to apply it to their programs and analyses. In the context of customer choice, those in the "independent" quadrant are the only ones likely to have sufficient cash flow to participate in most personal or community solar programs or CCA contracts. Those in the other quadrants will likely be left behind to absorb the socialized costs of stranded assets and other IOU overhead.

² When SCE experimented with groundbreaking lifestyle plans/bundles several years ago the issue of people feeling "pigeon-holed" came up in their evaluations of lifestyle plans. Before the SCE program team could fix the problem using a tool like the Georgia Power Rate Advisor mechanism shown here, top management made a pivot and prematurely eliminated their innovative efforts.

Mindsets: Ability + Intention to Pay



Low Income Solvency Segments



Source: *Innovations in Low Income Consumer Engagement*, 2017

Low Income Consumer Mindset Definitions

Hopeless: insolvent, no hope of being able to meet obligations

Changed fortunes: had middle class income but lost job

Frugal: husbands limited resources carefully and with great restraint

Paycheck to paycheck: income supports existence, no reserves to absorb unexpected shocks

Resourceful: manages limited resources creatively, barter, bargains

Juggler: variable income, “robbing Peter to pay Paul,” i.e. forced to choose medicine or rent or utility based on cash on hand

Dependent: Relies on kindness of strangers, charities, or government to survive

Under water: would pay if could, may be poor money manager

Gambler: manages limited resources badly while trying to game the system

Delinquent: truly a scofflaw, could pay but spends elsewhere

Careless: has funds but manages them poorly

- Consumer advocates are legitimately concerned about new policies and technologies that utilities and vendors want to introduce.
- Advocates are striving to protect **overwhelmed** vulnerable residents who they fear may not be able to take advantage of the investments in upgraded infrastructure;
- Disconnection rules are financially justified by utilities to prevent **irresponsible** customers from taking unfair advantage of protections and seasonal moratoriums which increase costs paid by other customers and shareholders;
- Investments in Smart Grid-enabled options (pricing, payment, technology) allow positive opportunities for **supported** and **independent** low-income consumers
- These investments offer societal and operational advances (integration of renewables, resilience, outage detection and restoration, efficiency) that **benefit everyone**.
- Care and creativity are needed so low-income consumers can participate as much as possible in these advances through programs such as on bill financing, community solar, and incentives for landlords to improve buildings for renters.

Panel Follow-up Questions

Market Perspectives

- 1) *What are the most compelling examples of successful implementation of customer choice that you heard during the Market Perspectives panel?*

The Texas model is the most mature example. As noted before, it can feel very overwhelming to consumers and doesn't make decarbonization a primary goal so while it is "successful" in that it is operational, I'm not sure I'd want to see the Texas approach replicated in California.

- 2) *Given some of the pitfalls illustrated by the panelists, how might California best avoid or mitigate these issues?*

This is a very tough question. Funding better energy literacy education about what it takes to deliver the level of service Californians have come to expect PLUS performance-based incentives to utilities to be more responsive and partner with other entities with complementary skills/services would go a long way. Unfortunately, marcom-heavy mass media statewide education campaigns are not effective ways to deliver this information. Two-way conversations that allow the "expert" to listen to the individual's concerns and respond with personalized information are more effective. Utilities that have leveraged this approach have found them effective with hard-to-reach populations. Accenture's 2017 *New Energy Consumer* report posits this mindset is particularly important to reaching millennials. Technology platforms that leverage bots and AI are coming on the market and may be the way to scale up what can happen immediately by working with local community-based organizations.

- 3) *What are the motivations and entities driving customer choice in California? How are they similar or different from the other markets?*

Motivations/entities include:

- Environmentalists and concerned consumers have a sincere interest in responding to climate change and reflect impatience with steps taken on the federal level.
- Municipalities driving CCA programs are impatient with their local IOUs, resent the rates their citizens are paying, and don't recognize the depth of investment the IOUs have made in renewable generation nor what it takes to deliver stable electricity 24 x 7.
- Non-profit aggregators see an opportunity to respond to the municipalities' desire for a cleaner energy future and make more resources available.
- For-profit companies and their trade associations have a reasonable desire for their new technology and product offerings to be successful and want to see policies that will enable their advancement.

The biggest difference between California and the other markets discussed is the degree of emphasis on decarbonization. The biggest similarity is that utilities are slow moving institutions and are not being as responsive as they could or should be. The CPUC has the power to make it easier for utilities to experiment with new programs without requiring everything be a full-fledged pilot with all that entails.



BIO

Judith Schwartz is President of To the Point, a human-centered design consultancy identifying and prototyping best practices for consumer engagement with sustainability, Smart Grid, renewables, time-variant pricing, low-income programs, and the digital home. Working at the nexus of public policy, technology, communications, and business; she consults to utilities, national organizations, and research companies and organizes outreach programs, cross-stakeholder workshops, and community summits.

Her publications include reports and meta-analyses for the U.S. Department of Energy, Edison Foundation, Smart Grid Consumer Collaborative, and most recently studies of community solar for the Low-Income Energy Issues Forum. Schwartz serves as a Commissioner on the Palo Alto Utility Advisory Commission.

After management roles at Apple Computer, Schwartz specialized in systems consulting, organizational alignment, and strategic marketing for leading high technology companies. She co-founded a start-up that developed a novel water purification technology. Schwartz is a graduate of Cornell University's College of Architecture, Art, and Planning.

<http://www.tothept.com>