

ADVANCED ENERGY BUYERS GROUP

the policy voice of advanced energy purchasers

COMMENTS OF THE ADVANCED ENERGY BUYERS GROUP

Re: California Public Utilities Commission Draft Customer Choice “Green Book”

Submitted June 11, 2018

I. INTRODUCTION

The Customer Choice Project initiated by the California Public Utilities Commission (“CPUC” or “Commission”) represents an opportunity for the state to step back and take a long-term view of how California’s electricity system can best meet the needs of California customers moving forward. As the state considers potential market and regulatory changes, the Advanced Energy Buyers Group (“AE Buyers Group”) appreciates the opportunity to provide feedback on the draft paper, “California Customer Choice: An Evaluation of Regulatory Framework Options for an Evolving Electricity Market” (“Customer Choice Whitepaper” or “Draft Green Book”).¹

The AE Buyers Group represents the views of a coalition of large electricity customers, with member companies spanning the retail, manufacturing, and technology sectors. Our companies have a significant collective footprint in California, and our comments reflect our perspective as large customers committed to increasing our own use of advanced energy, including

¹ California Public Utilities Commission Staff, *California Customer Choice: An Evaluation of Regulatory Framework Options for an Evolving Electricity Market* (May 17, 2018), available at http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy_-_Electricity_and_Natural_Gas/Cal%20Customer%20Choice%20Report%20%20v5-17-18.pdf.

renewable energy, energy efficiency, energy storage, electric vehicles, and demand-side management solutions.²

The AE Buyers Group supports efforts to ensure that California’s electricity market is fair, affordable, reliable, and able to support innovation and customer choice moving forward. The AE Buyers Group does not see any evidence that California could be headed into a situation similar to the California Energy Crisis, given significantly different market conditions today. The Buyers Group especially notes that the challenges identified in the Draft Green Book are not inherently linked to greater customer choice, but are rather outcomes of the specific regulatory and market structures that have developed in California over time—indeed, many markets allowing full or partial customer choice are performing reliably and delivering affordable electricity to customers.

At the same time, the AE Buyers Group also recognizes that a patchwork of customer options presents challenges in the absence of a cohesive plan or market structure, and appreciates the work done to date to explore these challenges, culminating in the Draft Green Book. The Buyers Group therefore supports efforts to explore whether further market changes would lead to improved outcomes. This exploration should rely on an inclusive, iterative, and deliberative process that starts with a clear vision, considers multiple options—including the status quo—and makes use of analysis and stakeholder feedback. Should the Commission, Legislature, the California Energy Commission (“CEC”), the California Independent System Operator (“CAISO”) or any other agency or body take steps to address the challenges identified in the Green Book, the AE Buyers Group encourages an approach that enhances, rather than restricts, customer choice. When supported by appropriate regulatory and market structures, customer choice can accelerate

² These comments represent the consensus view of the Advanced Energy Buyers Group (information and membership available at <https://info.aee.net/ae-buyers-group>). However, this document does not necessarily reflect the position of any specific member of the AE Buyers Group, and these comments should not be attributed to any individual company or companies participating in the AE Buyers Group.

innovation, drive down costs, and deliver emission reductions. California customers have shown a clear desire to participate actively in the electricity market, and California should embrace, rather than undermine, this opportunity.

The AE Buyers Group looks forward to additional opportunities to provide input on any proposed changes to California's electricity system.

II. ABOUT THE ADVANCED ENERGY BUYERS GROUP

The Advanced Energy Buyers Group is a business-led coalition of large energy users engaging on policies to expand opportunities to procure energy that is secure, clean, and affordable. Members of the Buyers Group are market leaders and major employers spanning different industry segments, including technology, retail, and manufacturing. Our companies are among the 71% of Fortune 100 companies and 43% of Fortune 500 companies that have established renewable and/or climate targets as part of our corporate sustainability commitments. We share a common interest in expanding our use of advanced energy, such as renewable energy like wind, solar, geothermal, and hydropower; demand-side resources like energy efficiency, demand response, and energy storage; and onsite generation from solar, advanced natural gas turbines, and fuel cells.

In 2017, members of the AE Buyers Group totaled over \$1 trillion in revenue and collectively consumed over 18 terawatt hours ("TWh") of electricity, including over 11 TWh of renewable electricity, equivalent to the electricity sales for the states of North Dakota and Delaware, respectively.

A. AE Buyers Group experience in the California electricity market

As noted above, members of the AE Buyers Group share an interest in increasing our use of advanced energy solutions, and we have made significant progress across the country, including in California. Collectively, our companies have experience participating in the California market in many different ways: as customers of investor-owned utilities (“IOUs”), as direct access customers, as participants in Community Choice Aggregators (“CCAs”), and as hosts of behind-the-meter installations. While we have taken steps to meet our electricity needs in California with advanced energy, we also note that the market overall provides limited options for customer choice relative to many other states, especially for customers unable to participate in the direct access market.

In this section, we explain how AE Buyers Group members participate in California’s market, including examples of AE Buyers Group members and other California customers driving innovation and advanced energy adoption through the customer choice options currently available.

i. Direct Access

Many AE Buyers Group members participate in direct access in California, meeting part or all of our electricity load through this market. Direct access in California, and elsewhere, allows us to meet our renewable energy goals cost-effectively and in a way that is tailored to our individual needs. Under direct access, members of the AE Buyers Group and other companies can source renewable energy from an electric service provider (“ESP”) or directly from renewable energy projects.

For example, because of its participation in the direct access market, Apple, Inc. was able to sign a power purchase agreement (“PPA”) with First Solar for 130 MW of the California Flats

project in Monterey County.³ Similarly, the University of California system, also a direct access customer, signed two solar PPAs totaling 80 MW, and also registered as an ESP in order to sell the output from these projects to its various campuses, also under direct access.⁴ These customers would not have been able to pursue these large-scale, offsite project without their direct access status because the option to sign long-term physical PPAs is not available to IOU customers.

At the same time, direct access customers also maintain the opportunity make investments behind the meter to reduce and manage their electricity consumption and to install onsite solar, small-scale wind, energy storage, or other distributed energy resources. Customer behind-the-meter efforts are described in more detail below.

However, because California's direct access program is fully subscribed, many customers, including our companies, are either restricted in the percent of our electricity load served under direct access or are unable to participate altogether.

ii. Community Choice Aggregation

Members of the AE Buyers Group also have experience participating in CCAs, and in some cases our companies are the largest participants in our respective CCAs. Because CCAs have been responsive to the needs and preferences of customers as they are being explored and developed, our participation in CCAs has enabled us to accelerate our renewable energy consumption in California, with options to source up to 100% of our load in a given territory with renewable

³ Mark Sullivan, "Apple Now Runs on 100% Green Energy, and Here's How It Got There," Fast Company (Apr. 9, 2018), <https://www.fastcompany.com/40554151/how-apple-got-to-100-renewable-energy-the-right-way>; First Solar, "California Flats Solar Project" (2016), http://www.firstsolar.com/-/media/First-Solar/Project-Documents/CAFlats_03391_DS_NA.ashx.

⁴ Jenny Heeter, Jeffrey J. Cook, and Lori Bird, *Charting the Emergence of Corporate Procurement of Utility-Scale PV*, National Renewable Energy Laboratory (Sept. 2017), available at https://www.nrel.gov/docs/fy17osti/69080.pdf?utm_source=newsletter&utm_medium=email&utm_campaign=newsletter_axiosgenerate&stream=politics, at 28.

energy. Many companies, including members of the AE Buyers Group and other customers, have chosen to participate in CCAs for this reason. For example:

- Microsoft has a corporate commitment to clean energy and has operated as carbon neutral company since 2012. Microsoft’s Silicon Valley campus enrolled in the CCA program with Silicon Valley Clean Energy to ensure that our campus runs on 100% renewable energy. This program enables the campus to ‘opt-up’ and source 100% renewable energy in partnership with organizations throughout the Bay Area to support a transition to a clean energy grid.
- Google buys a portion of its electricity for its Mountain View, California headquarters from CCA Silicon Valley Clean Energy, which provides the company electricity from 100% carbon free sources.
- LinkedIn was one of the first corporations to enroll in 100% clean renewable electricity to power all of its workplace operations in the California Bay Area. LinkedIn signed agreements last year with the CCA in San Francisco, CleanPower SF, and the CCA that services 12 cities in the Silicon Valley, Silicon Valley Clean Energy. The CCAs are a key pillar in LinkedIn’s sustainability strategy to reduce carbon emissions that contribute to climate change by 75% by 2030.

By participating in CCAs, these customers have been able to accelerate their own renewable energy consumption, consistent with the state’s goal to decarbonize its electricity system.

iii. Behind-the-Meter

Whether served by an IOU, CCA, or ESP, members of the AE Buyers Group are also actively pursuing behind-the-meter advanced energy deployment in California. This includes

distributed solar, behind-the-meter energy storage, fuel cells, and demand-side management, including energy efficiency, demand response, and smart building controls. For example:

- Over two-dozen Walmart stores served by Southern California Edison have installed advanced energy storage systems to shave the retailer’s peak load, balance out on-site solar generation with store consumption, and help the utility reduce peak demand on the grid in conjunction with a broader grid modernization plan.⁵
- Direct access customer Stanford University has also made significant onsite investments through its Stanford Energy System Innovations (SESI) program, including development of a new Central Energy Facility with an innovative heat recovery design that will reduce emissions and save money by increasing efficiency.⁶
- Microsoft’s Silicon Valley Campus, served by CCA Silicon Valley Clean Energy, will make use of onsite solar energy as well as innovative water harvesting and reuse solutions.⁷

These three examples, as well as countless others, demonstrate that customers are driving innovation and supporting California’s goals of decarbonization, reliability, and affordability under all types of load serving entities (“LSEs”). As long as opportunities are available and the market values these contributions, customers will continue to make such investments, no matter what entity provides their core electricity services.

⁵ Jeff St. John, “Wal-Mart, Advanced Microgrid Solutions to Turn Big-Box Stores Into Hybrid Electric Buildings,” Greentech Media (April 11, 2017), available at <https://www.greentechmedia.com/articles/read/wal-mart-to-turn-big-box-stores-into-hybrid-electric-buildings#gs.MEHYBsw>.

⁶ See Stanford University, *Fact Sheet and Frequently Asked Questions: The Energy and Climate Plan and Stanford Energy System Innovations (SESI) Program* (), http://sustainable.stanford.edu/sites/sustainable.stanford.edu/files/documents/FactSheet_FAQ_SESI.pdf.

⁷ Kevin Scott, “Building a sustainable campus in Silicon Valley” (Dec. 5, 2017), <https://blogs.microsoft.com/blog/2017/12/05/building-sustainable-campus-silicon-valley/>.

III. RECOMMENDATIONS

A. The AE Buyers Group recommends a thorough and inclusive process to consider and analyze any potential changes to California's electricity market.

The Draft Green Book makes clear the CPUC's view that changes are needed to avoid a second California energy crisis. The AE Buyers Group disagrees that California is at risk of another market crisis because the state has since corrected many of the errors that led to that crisis, including flaws in market design, weak monitoring programs, and the ability of out-of-state arbitrageurs to game the market. However, the Buyers Group supports efforts to explore whether further market changes would lead to improved outcomes. If the CPUC and other policymakers intend to take any steps to address the challenges identified in the Green Book, the AE Buyers Group strongly recommends that the CPUC initiate a clear and thorough public process that relies on detailed analysis and that includes multiple opportunities for input from interested stakeholders.

In particular, the AE Buyers Group warns strongly against taking steps to move directly from a final Green Book toward legislative or regulatory changes without allowing for analysis and stakeholder input on potential market changes. While the Green Book provides a useful assessment of underlying challenges and potential solutions, it does not provide sufficient information or analysis to justify any specific legislative or regulatory changes. Furthermore, the history of electricity regulation included in the Green Book identifies California's history of reactive, incremental legislative reforms as one cause of the current challenges. The conversation initiated by the Customer Choice Project and the Draft Green Book presents an opportunity to take a more comprehensive approach.

The AE Buyers Group urges CPUC to work closely with CAISO and CEC and to solicit input from the legislature, CCAs, ESPs, and California customers, including residential customers,

low income customers, and large commercial and industrial customers such as members of the AE Buyers Group. Any potential changes should be analyzed with a particular focus on their impact on affordability, fairness, reliability, and customer choice.

Furthermore, the AE Buyers Group notes that there are efforts already underway aimed at addressing some of the challenges discussed in the Draft Green Book, specifically CPUC's investigation of the Power Charge Indifference Adjustment ("PCIA"), which is intended to ensure that IOU customers are not impacted by departing customer load. In addition, the CPUC's integrated resource planning ("IRP") framework, which is intended to optimize resource portfolios of all of California's LSEs, may solve certain challenges identified in the Draft Green Book once the framework is completed and the first plans are operationalized. This and other pending proceedings—the outcomes of which have yet to bear out—should be taken into account as additional changes are contemplated.

A. The AE Buyers Group recommends first developing a clear vision for an affordable, reliable, and customer-focused energy future.

As the first step of a comprehensive and inclusive process to consider potential changes to California's electricity system, the AE Buyers Group encourages development of a clear, shared set of objectives for the Customer Choice Project moving forward, as well as a clear vision for the future state of California's electricity market. An overarching set of goals developed through stakeholder input will help guide the process of considering potential market changes, and allow the state to ask and consider potential answers to the question, 'where do we want to get to?' *before* asking, 'how do we get there?'

Rather than starting with a focus on solving current challenges, the AE Buyers Group therefore encourages the CPUC to build off the Draft Green Book and work with stakeholders to clarify the goals of the Customer Choice Project moving forward. For example:

The Customer Choice Project will bring together the principal regulatory agencies (i.e., CAISO and CEC), the Legislature, and all stakeholders, including CCAs, ESPs, and IOUs, to consider whether—and if so, what—changes are needed to California’s market structure and regulatory frameworks, including potential changes in the roles and responsibilities of different regulatory agencies and market actors. Any changes to California’s electricity system should:

- (a) Ensure that all customers will continue to have access to affordable electricity and that all customers are adequately informed and protected;*
- (b) Protect and enhance customer choice, and allow customers to directly participate in and benefit from the transition to a cleaner, more affordable, more reliable electricity system;*
- (c) Maintain or accelerate California’s progress toward its decarbonization goals;*
- (d) Ensure adequate incentives for investments in innovation;*
- (e) Take full advantage of the benefits of increased regional coordination and integration; and*
- (f) Include measures to incentivize and enforce continued reliability and resilience.*

Building off a set of high-level guidelines, California can consider how different regulatory structures would achieve and balance the state’s priorities, assess which entities can deliver on different priorities (i.e., IOUs, CCAs, ESPs, third parties, customers, etc.), and determine which entity or entities are best suited to oversee different responsibilities and objectives (i.e., CPUC,

CEC, legislature, CAISO, etc.). This approach will allow the state to focus first on where the system should be headed prior to considering any changes—either incremental or comprehensive—needed to get there.

B. Specific recommendations of the AE Buyers Group to strengthen customer choice; preserve reliability, resilience, and affordability; and take into account regionalization.

i. Protecting and strengthening customer choice in California will accelerate decarbonization and bolster affordability and reliability.

California currently offers customers limited choice relative to many other states, including the markets included as case studies in the Draft Green Book, and different customers have very different experiences in the California market due to the state’s limited direct access market. As the state considers potential market changes, customer choice should be protected and enhanced, not further restricted. A strong customer choice market that sends accurate price signals to customers and investors can support and accelerate California’s goals of affordability, decarbonization, and reliability.

While California’s history of customer choice has been rocky, the lessons learned in the California energy crisis and the experience of states across the country that have restructured successfully can be leveraged to ensure that expanded customer choice—whether full restructuring or changes to the state’s current hybrid market—will not compromise affordability or reliability. It is also important to emphasize, as the Draft Green Book does, that the Energy Crisis was driven by flaws in market design, weak monitoring programs, and gaming by large out-of-state arbitrageurs that resulted in skyrocketing prices in the new market, the collapse of some of the competitive providers in the marketplace, and shortages in energy supply that resulted in rolling outages to customers. With the right regulatory structures and market signals in place, there is little

risk of repetition. Instead, deliberate and well-planned expansion of customer choice will allow the state to leverage the growing customer demand for clean, advanced energy options to bolster affordability and reliability while accelerating achievement of the state’s decarbonization goals.

Increasing customer access to advanced energy is core to the mission of the AE Buyers Group, and the Group’s interest in increased customer choice centers around our desire to adopt clean, advanced energy resources at a faster pace than our utilities or the grid at large. As noted above, we are already taking significant steps to increase our use of advanced energy in California, and we intend to continue this progress.

Members of the AE Buyers Group are not unique among California customers in our desire for increased choice and our pursuit of advanced energy. The trends outlined in the CPUC paper are reflective of the significant customer interest in greater choice: the state’s Direct Access program filled immediately and has remained fully subscribed, and CCAs are growing quickly. Even customers who do not have a choice of electricity provider are taking steps to control their energy use and costs by installing onsite solar or storage, purchasing electric vehicles, and participating in demand response and demand side management programs. Interest from consumers in advanced energy is something our companies are very familiar with—our employees and customers are one key reason why our companies are pursuing advanced energy to power our operations. By opening opportunities for customer choice, and by setting appropriate market signals, the state has an enormous opportunity to unleash growing customer interest in cost-saving and clean advanced energy resources to deliver on its goals of decarbonization, affordability, and reliability.

Therefore, the AE Buyers Group encourages the CPUC to consider opportunities to expand customer choice in California. The market case studies included in the Green Book demonstrate

that there are a number of options to allow full customer choice, which can be tailored to state-specific circumstances and adjusted over time. Steps that would enhance customer choice in California, individually or in parallel, include:

- Allowing full retail choice for all interested customers;
- Expanding the state’s existing direct access market, including allowing new customers to participate;
- Introducing rate structures that provide meaningful incentives for customer-driven advanced energy deployment (i.e., that encourage solar, energy storage, demand response, energy efficiency, EV adoption, etc.);
- Introducing usable customer renewable energy offerings (i.e., renewable energy tariffs) for IOU customers;
- Increasing opportunities for large customers to partner with CCAs to drive innovation and enable long-term renewable energy commitments; and
- Expanding CAISO to develop a regional wholesale market (discussed in more detail in Section III.B.iii.).

Given that there is a backlog of interest in customer choice in California, the AE Buyers Group encourages the CPUC, CEC, CAISO, and the legislature to consider solutions to the challenges identified in the Green Book not only with today’s market in mind, but with a goal to enhance customer choice. Doing so with the right market structures in place will help, not hinder, the state’s ability to decarbonize affordably and reliably.

ii. California must protect reliability, affordability, and fairness, and should consider all options to deliver and enforce these priorities.

The AE Buyers Group agrees with the Draft Green Book authors that reliability, affordability, customer protection, and continued investment in innovation are important for any

electricity system, and strongly supports efforts to maintain these priorities moving forward. However, the AE Buyers Group notes that, under certain future scenarios, existing regulatory structures and responsibilities may no longer be appropriate, and that regulatory oversight, funding structures and sources, incentives, and other rules may need to be adjusted to address the challenges identified in the Green Book and to accommodate increased customer choice.

Specifically, consistent with our recommendation above to start with a high-level vision for the future of California's energy system, the AE Buyers Group encourages the state to first determine where the market should be headed, and then consider what changes, if any, are needed to ensure continued reliability, affordability, and fairness moving forward. For example, should CAISO take on additional responsibility for ensuring reliability? Should certain programs and investments be taxpayer-funded, rather than ratepayer-funded through the IOUs? What oversight is needed to ensure all customers have sufficient information and protection, and what agency is appropriate to regulate these obligations in a more diversified electricity system? The answers to these questions should not assume continuation of the status quo, nor should they assume that changes are needed. The Green Book already contains valuable information about other markets that California can draw from to pick and choose relevant approaches and adapt them to match the specific needs of California.

iii. California should consider how regionalization can bring benefits to CPUC's goals of affordability, decarbonization, and reliability while also enhancing choice.

The AE Buyers Group notes that regionalization of the CAISO would bring multiple benefits that would help to address some of the challenges noted in the Green Book while also enhancing customer choice. In any case, regionalization will impact California's market.

Therefore, the AE Buyers Group encourages the CPUC to work closely with CAISO to consider the impact of regionalization as it works with other stakeholders to chart a path forward.

Specifically, the AE Buyers Group notes that an expanded organized wholesale market in the west would:

- **Facilitate renewable energy integration, enabling new renewable energy development and decreasing curtailment of existing projects.** An expanded wholesale market would help reduce renewable energy curtailment in the region, provide a market for cost-effective resources located far from load centers, and facilitate transmission planning to enable greater renewable energy development. These changes would benefit existing renewable energy projects while helping to unlock opportunities to develop new, cost-competitive renewable energy projects across the west.
- **Provide additional flexibility and choice for AE Buyers Group members and other large customers as we seek renewable energy to meet our needs.** A larger wholesale market in the west would open new opportunities for companies to seek renewable energy projects through virtual power purchase agreements and other similar structures only available in competitive wholesale markets, bringing benefits to the western grid overall.
- **Improve grid performance and reliability.** A coordinated market across the western states would bring significant grid benefits to the region. For example, a larger regional footprint with a greater range of peak production and peak load times would help smooth out variable renewable energy generation.
- **Deliver cost savings to all customers due to more efficient resource use.** Already, the expansion of the Energy Imbalance Market to several utilities in the West has brought

significant customer savings, with total benefits since its initial expansion in November 2014 estimated at over \$250 million.⁸ A more integrated organized market would provide further savings by ensuring more efficient resource deployment and long-term planning across the region.

As California considers potential changes to address the challenges laid out in the Draft Green Book, it should not ignore the role of CAISO, and in particular an expanded CAISO. The AE Buyers Group reiterates that CAISO should specifically be included in development of any changes coming out of the Green Book to provide input on role it can play, including how this role might shift under a regional ISO.

IV. CONCLUSION

The Draft Green Book provides a detailed assessment of challenges facing the electricity system in California, explains how these challenges arose, and explores other models the state could look to moving forward. The Green Book specifically recommends that action be taken to “develop a plan to protect against another crisis,” but does not analyze the impact of different regulatory approaches or changes that the state could implement, nor does it provide recommendations as to next steps. The Draft Green Book should not be interpreted as a directive, but as the start of a conversation about what steps could be taken, whether they should be taken, and, if so, how they should be implemented.

As the Commission finalizes the Green Book and considers additional actions to address the challenges it identifies, the AE Buyers Group therefore strongly encourages establishment of

⁸ As of September 2017. See California ISO, *Western EIM Benefits Report: Third Quarter 2017* (Oct. 18, 2017), https://www.westerneim.com/Documents/ISO-EIMBenefitsReportQ3_2017.pdf.

clear objectives and a deliberative process that includes thoughtful and thorough consideration of any potential changes to California's electricity market. Such consideration should include comparison of different proposed market changes; analysis of the impact of such changes on affordability, fairness, decarbonization, and reliability; and ample opportunity for stakeholder input. Furthermore, any changes to California's market should strengthen and expand opportunities for customer choice, and take full advantage of the potential role of customers in accelerating secure, clean, and affordable advanced energy.

The AE Buyers Group appreciates the opportunity to provide comments in response to the Draft Green Book, and would be happy to serve as a resource moving forward as the Commission works with other agencies and policymakers to develop potential next steps.