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BWC Comments to RFI Expanding Flexible Demand in CA

Additional submitted attachment is included below.



July 3, 2024

California Energy Commission
Building Energy Efficiency Standards - Title 24
715 P Street
Sacramento, California 95814

[Submitted electronically via: [California Energy Commission : e-comment : Submit Comment](#)]

Re: Request for Information (RFI) and Feedback: Expanding Flexible Demand in California through Statewide MIDAS Data Delivery

To Whom It May Concern:

On behalf of Bradford White Corporation (BWC), we would like to thank you for the opportunity to comment on California Energy Commission's (CEC) Request for Information (RFI) and Feedback: Expanding Flexible Demand in California through Statewide MIDAS Data Delivery

BWC is an American-owned, full-line manufacturer of residential, commercial, and industrial products for water heating, space heating, combination heating, and water storage. In California, a significant number of individuals, families, and job providers rely on our products for their hot water and space heating needs. We have compiled our comments and questions to the CEC's RFI and Feedback: Expanding Flexible Demand in California through Statewide MIDAS Data Delivery

General

BWC generally supports the CEC's efforts to develop the market for appliances that can respond to grid conditions. That being said, some appliances, like electric resistance and heat pump water heaters (HPWH) are farther along than others. Water heater manufacturers along with the Air Conditioning, Heating and Refrigeration Institute (AHRI) collectively developed a connectivity standard, AHRI 1430, which water heaters can comply with. Compliance with AHRI 1430 provides a pathway for water heaters to be largely in line with California's efforts to reduce peak electricity demand and to utilize renewable energy. Water heaters in compliance with this AHRI standard come equipped with CTA-2045 ports, have the capability to download utility rate schedules, and can connect to the MIDAS database to receive pricing signals. The standard more importantly offers flexibility to utilities and third-party aggregators to manage water heaters as needed on a local, regional, or statewide scale. Of the approaches evaluated in the study, BWC supports Option 6 "3rd Party Port", as it aligns most closely with AHRI 1430, and offers the quickest path to market for our products: both new sales and existing HPWH products installed in the field. We additionally support option 5 "3rd Party Wi-Fi" from a customer interfacing standpoint as it is familiar technology for users.

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BWC does not support the remaining options evaluated as they would require significant and costly technology overhauls to our products and would delay the time to market. In addition to these comments, we have compiled our responses below to the questions raised in the RFI:

1. In regard to communication standards, what reliable alternative communication technologies exist to communicate directly to or with appliances?

BWC supports using existing technologies that can be rapidly deployed and satisfy the market need for the next 3-4 years. As stated in our “general comments” the AHRI 1430 standard is already in place and allows a great deal of flexibility for consumers, utilities and third-party aggregators. Additionally, we encourage the CEC to consider the following:

- Consumers are increasingly demanding Wi-Fi controls in their homes as a standard feature. In response to this trend, water heater manufacturers have included Wi-Fi in their HPWHs, the majority of current installations already have this feature.
 - Even with the CEC’s efforts to implement a statewide standard using MIDAS, there will inevitably be utilities and third parties who want more dynamic bi-directional communication with water heaters. Additional requirements on top of what the market is already asking for can become overly burdensome and slow the time to market.
 - The “Plug and Play” options involving a Universal Control Module (UCM), are passing the cost of the technology directly on to consumers.
 - The “Plug and Play” options involving radio or cellular, are passing the cost of the technology development on to the manufacturers, requiring significant research and development. No manufacturers have a built-in radio or cellular option today. Once more research is done, as described in the body of the report, the CEC should re-open discussion on radio or cellular.
2. Do you see any opportunities for CEC to mitigate the challenges associated with a 24/7/365 signal that have historically limited broadband/Wi-Fi as a preferred communication pathway?

BWC supports the use of CTA-2045 as it provides a wide array of methods for utilities to mitigate this risk for communication. Additionally, requiring that a utility rate schedule is downloaded locally does mitigate this issue for less-dynamic time-of-use operation. Lastly, there are not enough HPWHs installed in the field today to warrant a blanket decision as to what method of connecting to MIDAS is good for all installations. We encourage the CEC to continue evaluating MIDAS connectively as the inventory of installed HPWHs grow over the next several years.

3. Given the report’s conclusion that broadcast delivery of MIDAS data is more cost-effective than point-to-point delivery for the volume of appliances envisioned under FDAS, what are the main concerns with a statewide FDAS signaling system that relies on a broadcast, and what cost-effective solutions might mitigate these concerns?

BWC strongly contests the evaluation’s conclusion that broadcast delivery of MIDAS data is more cost-effective than point-to-point delivery. Our biggest concern is the lack of flexibility. With radio for instance, an entire fleet of HPWHs may be changed at once, assuming they are tuned into the appropriate radio signal. The simplest way to mitigate this issue is to not require a constant data stream for pricing, but rather allow consumers to select a utility rate schedule for operation.

4. How should the CEC prioritize broadcast options presented in Chapter 3 (FM, AM, Cellular) and why? Are there more appropriate and cost-effective broadcast options not listed here?

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BWC strongly encourages the use of CTA-2045, which affords the utility flexibility to decide what method of communication they would like to use for each customer. Alternatively, we support the use of Wi-Fi to pick a rate schedule based on the MIDAS database. Since Wi-Fi already exists on the majority of HPWH product installed and is standard in all new models being offered, we see no reason to create additional requirements.

5. What message content options (e.g. GHG, price, or some combination) do you suggest being sent using the default FDAS Rate Identification Numbers discussed in Chapter 2, and why?

From BWC's perspective, the message content consisting of pricing is likely most impactful. Consumers tend to respond well to saving money or avoiding cost, so likely conveying money to a consumer would resonate well. That being said, utilities and others should not place the burden on appliance manufacturers or UCM manufacturers to decipher prices for the consumer. If the intent is to have many discrete pricing periods (for instance 8 price signals in an hour) it would make it very difficult for manufacturers to determine how the water heater should respond to these signals, if at all, based primarily on prices.

6. Voluntary utility and third-party programs for load flexibility (shifting) have typically had very low participation from end users. What alternate Load Flexibility program(s) would you recommend that maximize participation while being ubiquitous, cost-effective, equitable, and technically feasible without requiring or precluding participation from third parties?

In our experience, voluntary utility programs rely heavily on outreach and incentivization. We believe this question is best suited for utilities or third-party program implementers to respond to, "how can we increase consumer adoption and improve consumer experience of load flexibility programs?" If the desired results are not being met through existing voluntary approaches, then the approaches may need work. Consumers ultimately should not be forced to participate if participation is low.

7. Assuming a statewide broadcast signal were to be deployed, would a default appliance setting that automatically initiates response to MIDAS signals at installation allow for ease in initiating flexibility of the appliance? What issues or concerns would you anticipate with such a plug-and-play functionality?

BWC strongly opposes this idea as it would result in us manufacturing a California specific model. Along with that, we would expect negative feedback from customers as now they are required to purchase and install a product that does not give them the freedom to voluntarily participate in a load flexibility program and makes participation mandatory.

8. The report proposes a hybrid communication architecture that incorporates both plug-and-play MIDAS response and third-party program enabling technology, represented by the Plug-and-Play Port scenario, as the most cost-effective solution to enable demand flexibility for an appliance. What do you think are some pros/cons of this approach?

BWC disagrees with the report's conclusion that these approaches provide the most cost-effective approach. While it might be "cost-effective" for the State, someone (i.e. manufacturers and consumers) will pay a premium to implement these approaches. The report claims that ALL of the presented options don't cost the State money, therefore all options should be viewed as "cost-effective" by the CEC, and options like Option 6 "3rd Party Port" which are more readily supported by current manufacturer technology should be considered.

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9. The consultant report suggests that a gateway architecture cannot support plug and-play flexibility. Is this accurate from your perspective? If not, describe how a gateway solution could enable both intrabuilding load optimization and plug-and play flexibility for appliances without sacrificing cybersecurity.

BWC does not believe this conclusion regarding gateway architecture is accurate. For instance, if the gateway is produced by the manufacturer and shipped with the product (such as our Bradford White Connect adapter), we would argue that the gateway has the same cybersecurity concerns or status as a water heater with this technology built in. Having said that, gateways are normally used in commercial applications, so we question the relevance to evaluating them for a consumer appliance standard.

10. Are there equity issues related to a MIDAS plug-and-play architecture that remain unaddressed by the report?

With respect to equity, BWC reiterates our position to adopt readily available technology that complies with AHRI 1430. New requirements will drive the cost of products up and may further exacerbate affordability concerns.

11. Provide a summary of your support for and/or rejection of any of the recommendations and conclusions offered in the report, along with a brief description of why for each.

See General Comments section.

12. How do you foresee electricity price, GHG, and grid signals being used in an appliance, e.g., an electric storage water heater's logic command and controls, whether through broadcast or internet connections?

BWC would use the grid signals and develop our own proprietary method to how our water heater responds. In very basic terms we would develop a method which would shed load if the price or GHG signal is high and load up if the price or GHG signal is low. We would not consider responding to price signals with a deep shed or grid emergency methodology, as we believe those scenarios should be reserved for a dynamic demand response program.

In closing, we would like to reiterate the need for the CEC to continue to evaluate communication protocols as well as consider a more realistic implementation timeline to adopt communication approaches that are already being used by manufacturers (i.e. AHRI 1430). We would like to thank the CEC for the opportunity to comment on this RFI. Please let me know if you have any questions or would like to schedule a meeting to discuss our comments further.

Respectfully Submitted,

Bradford White Corporation

Tom Gervais
Senior Director, Regulatory Affairs

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