Date of Hearing: April 7, 2021

ASSEMBLY COMMITTEE ON UTILITIES AND ENERGY
Chris Holden, Chair
AB 699 (Salas) – As Introduced February 16, 2021

SUBJECT: Energy Commission: Flexible Demand Appliances Rebate Program

SUMMARY: Establishes the Flexible Demand Appliances Rebate Program (FDARP) at the California Energy Commission (CEC) to provide a point-of-sale rebate for qualified flexible demand appliances to qualifying residential ratepayers of local publicly owned electric utilities (POUs), electrical corporations (a.k.a. investor-owned utilities, IOUs), electric service providers (ESP), and community choice aggregators (CCAs). Specifically, **this bill**:

1) Requires the CEC to consider the most appropriate program administration structure to run FDARP, including a third-party, a POU, IOU, ESP, CCA, or even the CEC itself. Suggests an unspecified cap on FDARP administrative costs.

2) Requires the FDARP administrator to:

    a. Approve eligible retailers to sell qualified flexible demand appliances.

    b. Establish a public list that includes 1) qualified flexible demand appliances approved by the CEC; 2) eligible retailers approved by the administrator; and 3) eligible load-management programs that have the ability to control the qualified flexible demand appliances.

    c. Provide outreach to low-income households and low-income and disadvantaged communities.

    d. Work directly with community-based organizations for marketing, education, and outreach efforts of the program.

3) Requires the CEC to make FDARP available to qualified residential ratepayers, including single-family homeowners, tenants, and qualified affordable housing landlords. Defines "qualified residential ratepayer" as a residential ratepayer that is served by an IOU, POU, ESP, or CCA and is either in a disadvantaged community or has an income at or below 60 percent of the area median income.

4) Requires the FDARP participant to own their qualifying appliance, and for the ratepayer responsible for the electricity bill within the housing unit where the flexible demand appliance is located to benefit from any financial incentive received by participating in a load-management program.

5) Mandates the program shall provide a point-of-sale rebate for qualified flexible demand appliances. Defines "qualified flexible demand appliances" as appliances that have the capability to schedule, shift, or curtail the electrical demand of a ratepayer through direct action by the ratepayer or through action by the program manager or a grid balancing authority, with the customer's consent, and that meets or exceeds the flexible demand standards currently in development at the CEC.

6) Requires the CEC to design FDARP to authorize incentive layering with existing incentives for energy efficiency and demand response (DR) programs, ensure that FDARP is cost-effective, and ensure that all qualified flexible demand appliances work with eligible load-management programs.

7) Defines "eligible load-management program" for the purposes of FDARP eligibility to be a residential load-management program that encourages ratepayers to shift electricity consumption during certain hours and meets one or more of the following:

    a. Is managed by a POU, IOU, ESP, CCA or third party;

    b. Encourages ratepayers to reduce or increase electricity consumption depending on the need for improving grid reliability, reducing emissions of greenhouse gases, or making electricity more affordable;

    c. Notifies ratepayers through a variety of means, including, but not limited to, text messages, email, and by phone; or

    d. Incentivizes ratepayers to participate using a variety of payments, including, but not limited to, cash and bill credits.

8) Defines "point-of-sale rebate" as an incentive that is available immediately upon purchase so that the price of each discounted appliance is conspicuously displayed to the ratepayer at the time that the price is interpreted by a point-of-sale system.

9) Defines "qualified affordable housing landlord" for purposes of FDARP eligibility as a landlord of rental housing units that are operated to provide deed-restricted low-income residential housing where the rents of the occupants who are lower-income households do not exceed those prescribed by deed restrictions or regulatory agreements pursuant to the terms of the financing or financial assistance, and meets one or both of the following requirements:

    a. The property is located in a disadvantaged community; or

    b. At least 80 percent of the households have incomes at or below 60 percent of the area median income.

10) Specifies that nothing in this bill is intended to supplant California Alternative Rates for Energy (CARE) program rates as the primary mechanism for achieving the goals of the CARE program.

11) Requires the CEC to submit an annual assessment of FDARP, that shall include a number of qualified flexible demand appliances that received an incentive pursuant to the program and the dollar value of the incentives, the energy and bill reduction outcomes of the program for the participants, the program's cost, the program's environmental benefits, the program's impact on the CARE program budget, and recommendations for improving the program to meet its goals.

12) Requires the CEC to evaluate FDARP's expenditures, commitments, uncommitted balances, future demands, performance, and outcomes, at an unspecified cadence, and

shall make any necessary adjustments to ensure the goals of the program are being met. Permits the CEC to credit uncommitted FDARP funds back to an unspecified entity or account.

EXISTING LAW:

1) Requires the CEC to establish appliance efficiency standards based on a reasonable use pattern. The CEC may prescribe other cost-effective measures, not preempted by federal labeling law. An appliance manufactured on or after the effective date of these standards may not be offered for sale in California unless it complies with the standards. (Public Resources Code § 25402 (c)(1)).

2) Authorizes the CEC to adopt standards for appliances to facilitate the deployment of flexible demand technologies, based on feasible efficiencies and improvements that will enable appliance operations to be scheduled, shifted, or curtailed to reduce emissions of greenhouse gases (GHG) associated with electricity generation. Mandates that the flexible demand appliance standards be cost-effective. (Public Resources Code § 25402 (f))

3) Authorizes the CEC to adopt regulations establishing an administrative enforcement process for appliance efficiency violations and allows the CEC to assess civil money penalties for violations up to $2,500 for each violation. Penalties assessed for appliance efficiency violations are deposited into the CEC's Appliance Efficiency Enforcement Subaccount and fund the CEC's appliance efficiency enforcement activities upon appropriation by the Legislature. (Public Resources Code § 25402.11)

4) Requires electric and gas IOUs to provide weatherization assistance, and specifies that weatherization means attic insulation, caulking, weather-stripping, a low flow showerhead, water heater blanket, and door and building envelope repairs to reduce air infiltration for low-income customers. This program is known as the Energy Savings Assistance Program (ESAP). (Public Utilities Code § 2790 (a), (b))

5) Specifies that weatherization may also include other building conservation measures, energy-efficient appliances, and energy education programs determined by the California Public Utilities Commission (CPUC) to be feasible and considering the cost-effectiveness of the measures as a whole and the policy of reducing energy-related hardships facing low-income households. (Public Utilities Code § 2790 (c))

6) Requires POUs to establish a nonbypassable charge on local distribution service to fund investments in any: 1) cost-effective demand-side management service; 2) new investments in renewable energy resources and technologies; 3) research, development and demonstrations programs; and 4) services for low-income customers including energy efficiency, education, weatherization, and rate discounts. A POU may choose which among these programs it wishes to fund. (Public Utilities Code § 385)

7) Establishes the CARE program, an assistance program for low-income residential customers of IOUs with annual household incomes no greater than 200% of federal poverty guidelines which reflects discounts based on level of need. CARE discounts cannot be less than 30% nor greater than 35% of the revenues that would have been produced for the same billed usage by non-CARE customers and requires the entire

discount to be provided in the form of a reduction in the overall bill for the eligible CARE customer. (Public Utilities Code § 739.1)

8) Defines "retailer" to include every seller who makes any retail sale or sales of tangible personal property, and every person engaged in the business of making such retail sales at auction; every person engaged in the business of making sales for storage, use, or other consumption or in the business of making such sales at auction; or any person conducting a horse race meeting. Additionally specifies that a newspaper carrier is not a retailer. (Revenue and Taxation Code § 6015)

9) Defines "point-of-sale system" as any computer or electronic system used by a retail establishment such as, but not limited to, Universal Product Code scanners, price lookup codes, or an electronic price lookup system as a means for determining the price of the item being purchased by a consumer. (Business and Professions Code § 13300)

10) Defines "landlord" as an owner of residential rental property. "Landlord" does not include a tenant who rents all or a portion of a dwelling unit to subtenants, nor a common interest development. (Civil Code § 1954.202)

11) Specifies a category of low-income residential housing as multifamily residential complexes where the rents of the occupants who are lower-income households do not exceed those prescribed by deed restrictions or regulatory agreements pursuant to the terms of the financing or financial assistance. (Public Utilities Code § 2852 (a)(3)(A)(i))

12) Requires the California Environmental Protection Agency to identify "disadvantaged communities" based on geographic, socioeconomic, public health, and environmental hazard criteria. (Health & Safety Code § 39711)

13) Defines "area median income" as the median family income of a geographic area of the state, as annually estimated by the United States Department of Housing and Urban Development, and published by the California Department of Housing and Community Development. (Health & Safety Code §§ 50052.5 and 50093)

14) Requires reports to the Legislature to be submitted in a printed copy to the Secretary of the Senate and electronically to the Chief Clerk of the Assembly. Specifies that if a report arises from a state agency, that agency must provide an electronic copy of the report's summary directly to each member of the Legislature, as appropriate. (Government Code § 9795)

FISCAL EFFECT: This bill is keyed fiscal and will be referred to the Committee on Appropriations for its review.

BACKGROUND:

What are Demand Management and Demand Response? – Demand management includes all measures that may reduce energy demand, such as energy efficiency, demand response (DR), or distributed energy resources. For the purposes of this bill, demand management is focused on the flexible DR capabilities of qualifying appliances in FDARP. In its most basic form, DR encourages electricity customers to reduce or shift their electricity usage in response to a price signal, a financial incentive, an environmental condition, or a reliability signal. Flexible DR contrasts with traditional DR in that flexible DR may be implemented more frequently, across many customers, and in a way that would save customers money with little or no inconvenience.

Flexible DR may be implemented through already existing technology and infrastructure. Smart metering is widely available within California. When these smart meters are paired with time-of-use rates, customers could receive benefits by shifting appliance loads to off-peak times. Many appliances are capable of shifting to avoid peak load prices including pool pumps, space heating, ventilation and air-conditioning equipment, refrigeration, electric vehicle service equipment, electric clothes dryers, dishwashers, and electric hot water storage tank heaters.

Currently, California's three largest IOUs[1] offer traditional DR programs. The IOUs' primary DR pilot is the Demand Response Auction Mechanism (DRAM). DRAM is a pay-as-bid solicitation through which each of the IOUs seek monthly DR system capacity, local capacity, and flexible capacity from third-party providers. Winning providers in DRAM are required to bid aggregated DR directly into the CAISO energy markets. The IOUs acquire the capacity and receive resource adequacy credit from it, but have no claim on revenues the winning bidders may receive from the energy market.[2] In 2020 and 2021, the IOUs procured 216 MW and 206 MW, respectively, from third-party DRAM providers.[3] For low-income customers participating in DRAM, the most recent numbers arise from 2016 and 2017, where the CPUC cited 4,000 participants in 2016 – 32% of all DRAM enrollments for that year – and approximately 15,500 in 2017 - representing 30% of all DRAM enrollments.[4]

The IOUs also offer DR programs outside the formalized DRAM process. One example is an air conditioning cycling program that sees high enrollment from customers in warm locations.[5] The program awards customers with bill credits if they allow the IOU to install a small, smart thermostat so the IOU can manage their air conditioner during spikes in demand. Additionally, third-party providers like Ohm Connect also offer programs.[6]

DR programs are generally designed to target customer load shapes rather than income. Unlike energy efficiency upgrades, a customer's load shape determines whether they can reliably participate in a DR program. Sometimes a customer's load shape is inflexible, such as a customer in a hot climate being unable to comfortably reduce their air conditioning load regardless of increased incentives. However, there are no income restrictions on those that voluntarily participate in the existing DR programs, and as noted above, many low-income customers do utilize DR.

During the high heat events of summer 2020, DR resources were called upon many times, and are believed to have mitigated the scope of the rotating outages. While the Joint Agency Root Cause Analysis (RCA) into the summer 2020 events showed some IOU DR generally performed well, it also showed gaps in DR performance, suggesting unutilized capacity during the critical

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[1] Pacific Gas & Electric Company, Southern California Edison and San Diego Gas & Electric.
[2] D. 19-12-040 *Decision Refining the Demand Response Auction Mechanism*; A. 17-01-012; issued December 23, 2019.
[3] Pg. 50, *CPUC 2020 Annual Report*; Feb. 1, 2021
[4] Data on low-income participation in DRAM from 2018 to present are currently pending.
[5] See SCE's *Summer Discount Plan (SDP) "Summer Savings for Your Bottom Line"* Factsheet; https://www.sce.com/sites/default/files/inline-files/SDP%2BFACT%2BSheet%2BNR-587-V6-0413.pdf
[6] https://www.ohmconnect.com/

periods of the heatwave.[7] The final RCA acknowledged further analysis is needed to understand the underlying causes of this gap.[8] While these analyses are ongoing, the CPUC recently moved forward with specific actions to decrease peak and net peak demand to avoid future rotating outages. Among these actions was the establishment of a new DR program, the Emergency Load Reduction Program, to help meet some of this need.[9]

Existing Low-Income Energy Efficiency Programs – The CPUC oversees an extensive portfolio of energy efficiency programs administered by the electric and gas IOUs as well as third parties. For low-income customers, the Energy Savings Assistance Program (ESAP) funds, at no-cost to qualifying participants, energy efficiency upgrades in eligible low-income residential homes and multifamily housing. Unlike the other energy efficiency programs, ESAP is not constrained by a cost-effective requirement, and instead considers both costs and benefits including improved health, safety, and comfort.[10] ESAP additionally offers a "Common Area Measures" program for multifamily buildings. To qualify, the property must be deed-restricted and the owner must certify that at least 65 percent of the tenant households meet the ESAP income guidelines. Energy efficiency services provided differ by the utility and target the communal areas of the residential building(s) or property. The ESAP CAM program can be combined with the ESA in-unit program. In 2020, ESAP was authorized at close to $600 million, paid for by a public purpose program surcharge in IOU rates. While ESAP reached ~ 85-100% of the 2020 statutory goal of households,[11] the program currently has approximately $567 million in unspent funds through December 2020.[12]

These millions in unspent funds, however, do not indicate a surplus. Rather, in recent decisions the CPUC has dedicated the majority of unspent funds – approximately $400 million – to act as "bridge funding" to continue the ESAP program goals without triggering additional rate increases in 2021.[13] Additionally, per CPUC Resolution E-5074[14] a portion of the unspent ESAP balance is set aside as a "post-pandemic return to service credit" for ESAP contractors. According to the CPUC, these measures leave the remaining unspent balance at ~ $87 million, which the IOUs have proposed to carry forward into the subsequent ESAP cycle to help offset future rate burden. This "second bridge" or rollover funding application is awaiting a CPUC decision.[15]

In 2015, the Legislature passed AB 793 (Quirk, Chapter 589, Statutes of 2015) which directed the CPUC to require electric IOUs, by June 30, 2016, to develop and implement educational plans and incentive programs for customers to control their electricity use and acquire energy

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[7] Starting at pg. 50; CAISO, CPUC, and CEC *Final Root Cause Analysis Mid-August 2020 Extreme Heat Wave*; January 13, 2021.
[8] *Ibid*, pg. 56
[9] D. 21-03-056 *Decision Directing PG&E, SCE, and SDG&E to Take Actions to Prepare for Potential Extreme Weather in the Summers of 2021 and 2022*; R. 20-11-003; issued March 26th, 2021.
[10] Pg. 31, CPUC *Statewide Energy Savings Assistance Program 2017-2020 Cycle Policy and Procedures Manual*; Version revised September 2019. https://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442457425
[11] Goal of ~ 401,500 homes reached; see *CPUC 2020 Annual Report*, pg. 57.
[12] Low Income Oversight Board Meeting "Joint IOU's Unspent Funds for ESAP"; September 17, 2020. https://liob.cpuc.ca.gov/wp-content/uploads/sites/14/2020/12/Item-009c_IOU-Unspent-Funds-for-ESA-LIOB-200917.pdf
[13] D. 20-08-033 *Decision on SDG&E Company's PFM of Commission D. 19-06-022*; A. 14-11-007; Issued September 4, 2020.
[14] https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M339/K499/339499544.PDF
[15] A. 19-11-003

management technology. IOU work plans were completed in the middle and late part of 2017,[16] and IOU programs for customer education and incentives began in late 2017. As part of these efforts, ESAP incorporated smart thermostat installation as a qualifying technology in 2019. Southern California Edison (SCE), for example, now lists both smart power strips and smart thermostats as qualifying appliances under ESAP.[17] Through the end of 2018, the IOUs reported over $14 million in rebates for qualifying technologies, including thermostats, home area networks, and smart power strips, serving 84,570 customers. In 2019, a total of 122,000 measures were installed resulting in 13,200 MW hours of savings.[18]

CEC Flexible Demand Appliance Standards – SB 49 (Skinner, Chapter 697, Statutes of 2019) requires the CEC to evaluate any proposed flexible demand appliance standards for technical feasibility, cost-effectiveness, cybersecurity, grid reliability, consumer consent, and ease of use. The CEC must also propose regulations that provide the necessary process to comply with and enforce the flexible demand appliance standards, including potential labeling requirements. However, the CEC is still in the beginning of developing the standards, which are not expected to be in effect until late 2023. A formal rulemaking is not even set to open until the end of this year.[19] Under SB 49, the CEC is also required to consult with the CPUC and load-serving entities to better align the flexible demand appliance standards, once promulgated, with existing demand response programs.

COMMENTS:

1) *Author's Statement.* "Having smart home devices helps working families save money on their electric bills, reduce emissions, and ease stress on the grid during peak demand hours. With energy costs and rolling blackouts increasing, particularly during natural disasters like wildfires, we need to ensure that all communities are able to access smart home devices. By getting these devices into more homes we can help families in underserved communities save money and relieve stress on the grid to prevent future blackouts."

2) *All Aboard?* Currently, California's three largest IOUs offer DR programs. Some POUs may offer DR programs, but they are not statutorily obligated to do so.[20] Similarly, the committee is unaware of any DR program mandates on the CCAs or ESPs. CCAs and POUs are subject to the statewide goal established in SB 350 (De León, Chapter 547, Statutes of 2015) which required the CEC to set targets to double energy efficiency savings in the state by January 1, 2030; however, this target is not required to be met through DR. This bill mandates POUs, CCAs, and ESPs – which currently have no DR program requirements – to not only participate in the CEC's FDARP but to potentially manage such programs within their territories. This is especially unclear for ESPs who have no defined service territory and primarily engage directly with large energy consumers, not low-income residential customers. Additionally, this bill clarifies that

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[16] As directed by CPUC Resolution 4820-E
[17] SCE ESAP website under "What Appliances or Services Could You Get?" https://www.sce.com/residential/assistance/energy-saving-program?from=/esap; as viewed on March 31, 2021.
[18] Data from 2018 & 2019 arose from a data request of the CPUC shared with the Committee.
[19] Pg. 12 CEC Staff White Paper *Introduction to Flexible Demand Appliance Standards*; November 2020.
[20] See PU Code § 385 which requires the POUs to collect a surcharge to be used for any one of four programs. The POUs may choose which program to implement, but are not required to implement all.

FDARP is not intended to supplant CARE program rates, yet CARE is only an IOU-mandated program. *In order to align the goals of the rebate program presented in this bill with the actual practices and existing mandates of the utilities, the committee may wish to limit the scope of this bill to only electric corporations, and as such retain program oversight at the CPUC.*

3) *Funding.* This measure allocates funding to the CEC without specifying a funding source. In conversations with the author, the committee was made aware of the intent to use $15 million in unspent ESAP funds to implement FDARP. As noted above, those ESAP funds do not represent a surplus but have largely been consigned to continue funding ESAP during 2021 as a result of non-collection arising from the current COVID-19 pandemic and authorization delays.

   Additionally, ESAP, as a result of passage of AB 793 (Quirk, Chapter 589, Statutes of 2015), already incorporates some flexible DR, such as smart thermostats and power strips, as qualifying appliances. However, this bill stipulates that FDARP be cost-effective as described in the CEC's flexible demand appliance standards development, which may consider the cost of flexible demand appliances compared to nonflexible demand appliances, among other considerations. This cost-effectiveness methodology differs with the CPUC's avoided cost calculator used for its DR programs. These differences in methodologies could have the unintended consequence of the CEC authorizing an incentive for a demand flexible appliance that would not have a qualifying DR program to participate in. This is counter to the intent of the bill which specifies "all qualified flexible demand appliances shall work with eligible load-management programs." *Should the committee wish to identify ESAP monies as the funding source for this program, the committee may wish to consider merging this bill's program with ESAP in order to reduce administrative burdens and minimize loss of funds during a period of under-collection. The committee may also wish to specify that any funds used to expand ESAP's qualifying appliances should not impact ESAP program funds already assigned by the CPUC for other purposes.*

4) *Mechanics – how do point-of-sale rebates work in a program targeted to an income-based customer class?* "Point-of-sale" rebates currently exist in IOU and some POU service territories.[21] These types of rebates are referred to as "upstream" programs, in that the IOU or POU directly pays the appliance manufacturer or retailer to offset the cost of all customer purchases of those appliances. The customer is often unaware of the discount applied; all they experience is a reduced price for a more efficient product. Additionally, the retailer does not have the responsibility for verifying customer eligibility; the discount applies to any customer that buys that product.

   Other appliance incentive programs employ different mechanics for customer participation. ESAP funds, at no-cost to qualifying participants, energy efficiency upgrades in eligible low-income residential homes and multifamily housing. Eligible participants apply to the program, and if approved the IOU will visit their house to

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[21] The Sacramento Municipal Utilities District has a robust point-of-sale rebate program, such as those products offered at the "SMUD Energy Store" https://smudenergystore.com/homepage?gclid=CjwKCAjw3pWDBhB3EiwAV1c5rFn_A0iAxLEXPzjxh7gw4K-FvXDlEAwaRempM1uWwVKheuUYP4W71RoCFLAQAvD_BwE

conduct an assessment, schedule a contractor to install the updated appliances, and perform a post-installation inspection to ensure the work was performed to applicable standards. The income eligibility requirements are verified by the IOU at the time of application.

This bill contemplates only a point-of-sale rebate but requires income verification for program participation. It is unclear how an eligible retailer will determine whether the purchaser is a qualified residential ratepayer or a qualified landlord. These program mechanics could have the unintended consequence of diluting the funding available to low-income customers by making it challenging for retailers to determine who qualifies for the program. *The committee may wish to consider removing the point-of-sale requirements in this bill and instead retaining the income verification process and rebate structure employed by ESAP*.

5) *Related Legislation*.

AB 345 (Cooper, 2021) requires the CEC to create a three-year appliance rebate program, funded upon appropriation by the Legislature, for low-income customers to purchase new energy star or other energy-efficient appliances. Status: to be heard in the Utilities and Energy Committee on April 7th, 2021.

6) *Prior Legislation*.

AB 1846 (Salas, 2020) required each IOU and POU to offer to low-income ratepayers in their service territories instant rebates for smart thermostat device purchases, as specified. Status: Died – Assembly Committee on Utilities and Energy.

SB 49 (Skinner) modifies the CEC's appliance energy efficiency regulatory authority to allow the CEC to establish appliance efficiency standards that facilitate the deployment of flexible demand technologies. Requires the California Natural Resources Agency to conduct an assessment of upgrades to the State Water Resources Development System that would support California's climate goals. Status: Chapter 697, Statutes of 2019.

AB 793 (Quirk) requires electric IOUs, by June 30, 2016, to develop and implement educational plans and incentive programs for customers to control their electricity use and acquire energy management technology. Requires the CPUC to require IOUs to include home energy management technology in weatherization programs for low-income customers. Status: Chapter 589, Statutes of 2015.

SB 350 (De León) among its many provisions, required the CEC, in collaboration with the CPUC, to establish annual targets for energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and gas final end uses of retail customers by January 1, 2030. Status: Chapter 547, Statutes of 2015.

SB 17 (Padilla) establishes the smart grid policy of the state, and requires the CPUC to determine the requirements for a smart grid deployment plan and each electrical corporation to develop and submit a smart grid deployment plan to CPUC for approval by July 1, 2011. Status: Chapter 327, Statutes of 2009.

7) *Double Referral*. This bill is double-referred; upon passage in this Committee, this bill will be referred to the Assembly Committee on Natural Resources.

REGISTERED SUPPORT / OPPOSITION:

Support

California Efficiency + Demand Management Council
Center for Sustainable Energy
Ecobee
Enersponse
Leap
Ohmconnect, INC.
Rising Sun Center for Opportunity
Zen Ecosystems

Opposition

None on file.

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