

November 20, 2018

Arizona Corporation Commission
1200 W Washington St
Phoenix, AZ 85007

Re: E-01345A-17-0134, In the matter of the application of Arizona Public Service Company for a Ruling relating to its 2018 Demand Side Management Implementation Plan

Dear Chairman and Commissioners,

The American Council for an Energy-Efficient Economy (ACEEE) welcomes this opportunity to provide comments to the Arizona Corporation Commission on the pending 2018 Demand-Side Management Plan proposed by the Arizona Public Service Company (APS). ACEEE is a nonprofit research organization based in Washington, D.C., that conducts research and analysis on energy efficiency. ACEEE is one of the leading groups working on energy efficiency issues in the United States at the national, state, and local levels. We have been active on energy efficiency issues for more than three decades. In Arizona, we also recently submitted comments in October 2018 regarding a docketed letter on cost-effectiveness testing of energy efficiency by Commissioner Olson.¹

ACEEE would like to specifically address APS's proposed plan to weaken, and in some cases altogether eliminate, funding for energy efficiency programs for certain residential, as well as commercial and industrial, customers. These changes would directly contribute to higher energy bills for households and shift funding toward more-expensive and more-polluting fuel sources and could weaken the ability of the state to meet efficiency savings targets requiring APS to achieve savings equivalent to 22% of retail sales by 2020. For these reasons, as well as others outlined below, we urge APS and the Commission to:

- 1.) Sustain APS funding for energy efficiency programs at prior program year levels.
- 2.) Share analysis used to justify the claim that the market has transformed to the point where customer-funded incentives are no longer needed to drive adoption for recently eliminated measures, such as lighting, efficient motors, HVAC test & repair, and others.
- 3.) Consider opportunities to foster new and emerging efficiency technologies and programs for underserved customer classes by further diversifying portfolios rather than scaling back efficiency efforts.
- 4.) Restore customer \$/kWh saved incentives, especially for custom measures for large facilities, to prior levels and to levels comparable to those offered in neighboring states to continue attracting large commercial and industrial customers to invest in Arizona and reap the utility, societal, and participant benefits of energy efficiency.

Please see below for additional analysis supporting ACEEE's recommendations.

¹ <http://docket.images.azcc.gov/0000192596.pdf>

1.) Sustain APS funding for energy efficiency programs at prior program year levels.

Research demonstrates that energy efficiency programs are, on average, the least cost resource available to electric utilities nationally² and less expensive than adding new energy supplies. This finding is also true for Arizona, where energy efficiency is the least expensive energy and capacity resource, based on the utilities' Integrated Resource Plans and annual demand-side management reports. In addition, energy efficiency provides a variety of corollary benefits, such as local employment, comfort, health and safety improvements for customers, reduced environmental emissions, improved efficiency and competitiveness of local businesses, and help for customers in reducing the burden of utility bills. Research also consistently demonstrates the substantial value of energy efficiency to reduce system costs and defer the need to invest in costly distribution and transmission infrastructure.

Since 2007, ACEEE has published the *State Energy Efficiency Scorecard*, providing an annual benchmark of state progress on efforts to save energy across multiple policy sectors, including utility demand-side management programs, transportation, and building efficiency.³ While Arizona has performed relatively well in recent years, ranking 17th in 2018, the state has fallen from its 12th place finish in 2013 and appears set to continue to fall in parallel with a significant decline of savings because of APS's defunding of efficiency programs.

Furthermore even as APS has substantially reduced its energy efficiency spending and savings targets for the year, it appears set to fall significantly short of these lower targets. Table 1 illustrates historical energy efficiency expenditures and corresponding savings as reported by APS in recent years, juxtaposed with proposed 2018 efficiency budgets and anticipated savings.

Table 1: Historical Demand-side Management Program Expenditures and Savings (2015 – 2018)*

Arizona Public Service Company Demand-Side Management Expenditures & Savings					
	2015	2016	2017	2018 (Jan-June)	2018 (proposed end of year)
Energy efficiency program costs (\$)	\$57,232,414	\$62,635,977	\$56,721,062	\$13,585,957	\$45,836,185
Energy efficiency non-residential program costs (\$)	\$27,078,893	\$31,956,950	\$29,113,626	\$4,383,729	\$18,754,723
Energy efficiency savings (MWh)	552,424	572,768	627,348	80,904	508,893
Retail sales	27,017,353 (2014)	27,398,270 (2015)	27,488,698 (2016)	n/a	27,488,698 (2016)
Gross incremental savings as % of retail sales	2.04%	2.09%	2.28%	n/a	1.95%
Cumulative savings	9.55%	11.82%	14.37%	n/a	n/a

² Lawrence Berkeley National Laboratory, June 2018: [The Cost of Saving Electricity Through Energy Efficiency Programs Funded by Utility Customers: 2009-2015](https://emp.lbl.gov/publications/cost-saving-electricity-through). <https://emp.lbl.gov/publications/cost-saving-electricity-through>.

³ aceee.org/research-report/u1808

As Table 1 shows, total proposed portfolio-wide efficiency expenditures represent a 19% decrease from 2017, along with a 36% cut in non-residential programs. While clearly weakening the ability of programs to deliver savings, a recent mid-year status report from APS indicates that changes to and elimination of certain programs is resulting in program participation drastically lower than anticipated.⁴ According to figures presented by APS, total energy efficiency spending between January and June 2018 was \$13.6 million, just 30% of the \$45.8 budgeted for the year. For non-residential programs, the discrepancy is even greater, with \$4.4 million spent in the first half of the year, just 31% of the \$14 million spent on these programs during the same period last year and just 23% of the \$18.75 million budgeted this year. Even after reducing the budget for non-residential programs by more than a third relative to 2017, APS is on course to spend less than 50% of the \$18.8 million budgeted to these programs in 2018 and just 30% of that spent on non-residential programs in 2017.

2.) Share analysis used to justify the claim that the market has been transformed to the point where customer-funded incentives are no longer needed to drive adoption for recently eliminated measures, such as lighting, efficient motors, HVAC test & repair, and others.

As described in a December 1, 2017, letter from APS to the ACC, APS outlined plans to eliminate a variety of measures under its Solutions for Business efficiency program with the stated claim that, “The market has been transformed to the point where customer funded incentives are no longer needed to drive adoption.” However, APS did not provide data to support this claim, which stands in sharp contrast to efforts by other utilities in places like Colorado, Illinois, Maryland, Michigan, Nevada, Arkansas, and New York – among others – to continue to increase savings targets and investment in efficiency. Utilities in these states and others continue to diversify their portfolios of efficiency measures, recognizing that efficiency continues to offer the lowest cost energy resource compared to other fuels. The measures APS eliminated include:

- Induction lighting
- Occupancy sensors
- Daylighting controls
- LED traffic lights
- Whole Building – Design Team
- Street lights
- Efficient motors
- HVAC Advanced Diagnostic Tune Up
- HVAC test & repair
- CO2 sensors
- CO sensors
- Hotel room controls
- Efficient clothes washers

This partial list does not include a variety of other measures that have been recently eliminated for most commercial customers, except K-12 schools.

⁴ <http://docket.images.azcc.gov/0000191757.pdf>

Indeed, a primary goal of energy efficiency is to transform the market to remove barriers to the adoption of efficient new technologies to help bring them into the mainstream and make them common practice. But while APS's efficiency programs have been instrumental in creating lasting change, the decision to step away from these measures and decrease funding in others is not supported by evidence. It is also shortsighted to use the success of APS programs as an excuse not to continue to look for ways to identify and invest in other opportunities to strengthen savings in these and other emerging technologies.

3.) Consider opportunities to foster new and emerging efficiency technologies and programs for underserved customer classes by further diversifying portfolios rather than scaling back efficiency efforts.

APS has the opportunity to diversify its portfolios to foster new and emerging technologies and programs. For example, while new federal lighting standards are anticipated to increase efficiency of general service lamps in 2020, these have yet to take effect and uncertainty remains regarding their implementation. Meanwhile, consumers continue to find a wide range of inefficient halogen and specialty incandescent lamps on store shelves. Overall, according to the National Electrical Manufacturers Association, LED lamps accounted for 36% of national light bulb sales in the fourth quarter of 2017, while halogen lamps still held 48% of market share. Even in states where LED market share is already high (greater than 40%), continued investment in residential lighting programs is critical. Early evidence from New York and Massachusetts suggests that LED adoption slows when program activity is scaled back, arguing for continued promotion rather than premature retreat. Rather than scaling back on programs, APS should look to other opportunities, measures, and customers to achieve savings, such as targeting underserved markets like those aimed at low-income customers, as well as for specialty lighting that has been slow to see the same uptake as general purpose lamps.

In considering additional ways to strengthen and expand its portfolio of offerings, APS can look to ACEEE's *Utility Energy Efficiency Scorecard*, specifically reviewing utilities that performed well in our scoring categories for program diversity and emerging program areas.⁵

4.) Restore customer \$/kWh saved incentives, especially for custom measures for large facilities, to prior levels and comparable to those offered in neighboring states to continue attracting large C&I customers and reap the utility, societal, and participant costs of energy efficiency.

APS has also reduced customer incentives for non-residential measures to levels far below most other utilities across the region. Table 2 shows incentive levels for custom measures offered to large C&I customers by utilities across the region, with APS ranked at the bottom. While incentives across the region are commonly set at \$0.15/kWh or higher,⁶ APS set incentives for large custom projects at \$0.05 per kWh in 2017. In 2018 APS scaled these back further to allow

⁵ aceee.org/research-report/u1707

⁶ These include PacifiCorp programs offered in Utah, Washington, and Wyoming, and Los Angeles Department of Water & Power. Utilities offered custom incentives of \$0.20 per kWh or higher include Avista Corp (WA and ID), Portland General Electric Co (OR), and Tacoma Public Utilities (WA). Puget Sound Energy offers incentives of \$0.30 per kWh.

large customers to collect a \$0.28 per kWh incentive, but only during on-peak periods, which would consist of approximately just 3-8 weekdays between June and September, although official approval by the commission is still pending. ACEEE advises against shifting funds away from large facility programs as these often represent the most cost-effective energy savings opportunities, partly because large C&I measures tend to have longer lifetimes than many residential measures.

Table 2: Incentive Levels for Custom Energy Efficiency Measures by Utilities (Western region)

Utility	State	Ownership	Custom Incentive
Puget Sound Energy Inc	WA	IOU	\$0.30/kWh
Clark County PUD	WA	Political Subdivision	\$0.20-\$0.27/kWh
LADWP	CA	Municipal	\$0.15 - \$0.25/kWh
Portland General Electric Co	OR	IOU	\$0.22 - \$0.25/kWh
Tacoma Public Utilities	WA	Municipal	\$0.23/kWh
PacifiCorp	OR	IOU	\$0.22 /kWh
Avista Corp	ID, WA	IOU	\$.20/kWh
Imperial Irrigation District	CA	Political Subdivision	\$0.18/kWh (process loads); \$0.25/kWh HVAC/Refrigeration
Idaho Power Co	ID	IOU	Based on the lesser of two calculations: \$0.18/kWh or 70% of the project cost
Sacramento Municipal Util Dist	CA	Political Subdivision	\$0.08/kWh - \$0.15/kWh
PacifiCorp	UT, WA	IOU	\$0.15/kWh
PacifiCorp	WY	IOU	\$0.15/kWh + \$50/kW average monthly demand reduction
Hawaiian Electric Co Inc	HI	IOU	\$0.08-\$0.12/kWh + \$125/kW (for peak demand reduction from 5-9 pm weekdays)
Salt River Project	AZ	Political Subdivision	\$.10/kWh
Nevada Power Co	NV	IOU	\$0.10/kWh (on-peak); \$0.05/kWh (off-peak)
Sierra Pacific Power Co	NV	IOU	\$0.10/kWh (on-peak); \$0.05/kWh (off-peak)
UNS Electric	AZ	IOU	\$0.07/kWh
Pacific Gas & Electric Co	CA	IOU	\$0.06 /kWh, \$0.12 /kWh
Arizona Public Service Co.	AZ	IOU	\$0.05 /kWh; (to be replaced by \$0.28 per on-peak kWh from June through September)

Furthermore, in a recent ACEEE review of the levelized cost of saved energy from efficiency portfolios offered by the 49 largest electricity utilities in the U.S., it was found that even before recent cuts to incentive levels, APS spent roughly \$0.021 per kWh saved on a levelized basis across its entire efficiency portfolio, well below the average of \$0.031 per kWh.⁷ This shows that, in addition to being a least-cost energy resource, energy efficiency is also cheaper in Arizona than most other states, and by scaling back on efficiency programs APS is depriving customers of its unique economic benefits.

Table 3 illustrates the especially damaging impact of APS’s changes on participation rates for the Large Existing Facilities program within the Non-residential portfolio. These programs are targeted to customers who have an aggregated monthly peak demand greater than 100kW and offer incentives for energy efficiency improvements in lighting, HVAC, motors, building envelope, and refrigeration measures. Through the first half of 2018, APS had processed only 244 program applications from large facilities, with \$2.9 million spent, just 23% of total annual funds budgeted for the program. These figures show that recent changes to programs have led to drastically fewer applications from large C&I customers, contributing to APS underperforming on goals that have already been significantly reduced from prior years.

Table 3: Arizona Public Service Co - Large Existing Facility Program Participation and Expenditures (2015-2018)

APS Large Existing Facility Program		2015	2016	2017	2018
January-June Mid-Year DSM Status Report	6-month expenditures	\$5,757,709	\$6,909,574	\$9,159,812	\$2,910,633
	% of annual budget	31%	33%	46%	23%
	# of applicants	539	643	879	244
Year End DSM Report	Annual expenditures	\$19,263,713	\$20,229,610	\$19,242,689	\$12,488,018 (budgeted)
	% of annual budget	103%	95%	97%	n/a
	# of applicants	1,421	1,588	1,974	n/a

To remain competitive with other utilities in the region and continue to attract sufficient interest from C&I customers, APS should restore incentives to levels offered in prior years, especially for large facility programs. For additional information and recommendations on designing and building programs responsive to the unique needs of large customers, please review our fact sheet, [Industrial Efficiency Program Can Achieve Large Energy Savings at Low Cost](#).⁸

⁷ Molina, M. and G. Relf. 2018. Does Efficiency Still Deliver the Biggest Bang for Our Buck? A Review of Cost of Saved Energy for US Electric Utilities. American Council for an Energy-Efficient Economy. Proceedings of the ACEEE Summer Study on Energy Efficiency in Buildings.

<https://aceee.org/files/proceedings/2018/index.html#/event/event-data/details>.

⁸ ACEEE. 2016. Industrial Efficiency Programs Can Achieve Large Energy Savings at Low Cost.

<https://aceee.org/sites/default/files/low-cost-ieep.pdf>.

ACEEE appreciates this opportunity to provide comments and is available as a resource to discuss any of the issues raised herein or others the ACC and APS may be considering regarding the treatment of energy efficiency. We have attempted to keep our comments succinct, and welcome further discussion on ways that ACEEE could help Arizona use energy efficiency to strengthen the economy, create jobs, and reduce pollution.

Sincerely,



Weston Berg
Senior Research Analyst, State Policy
ACEEE
wberg@aceee.org
202-507-4293



Annie Gilleo
Senior Manager, State Policy
ACEEE
agilleo@aceee.org
202-507-4002