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Comment on SB350 Barriers Study

Additional submitted attachment is included below.

August 25, 2016

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California Energy Commission
Dockets Office, MS-4
Re: Docket No. 16-OIR-02
1516 Ninth Street
Sacramento, CA 95814

RE: Comments on SB 350 Study on Barriers of Low-Income and Disadvantaged Communities to Renewable Energy and Energy Efficiency

The scope of the SB350 Barriers Report should include examination of inclusive financing for distributed energy solutions, which facilitates investment in energy efficiency and on-site renewable energy for all utility customers.

Making the case for financing as a complement to public funding

Inclusive financing is a complement to public funding. In direct install programs and rebate programs, taxpayers or ratepayers cover the cost of some upgrades while leaving other cost effective opportunities at any given site unaddressed. Financing can be used to leverage the extremely limited incentive funds available by supplementing those benefits to achieve deeper savings and greater benefits for each participating household.

We recommend increasing the scale of funding available to taxpayer and ratepayer funds through the respective procedures of legislation and regulation to the extent possible. However, the current levels are so low compared to the need that California has good cause to expand its search for solutions to include harnessing private sector capital.

At the current level of funding, LADWP explained at the SB350 workshop that it would take them *a century* to reach households eligible for low-income programs. Increasing appropriations and ratepayer funding commitments by 100% would only cut that figure in half – to 50 years.

Some experts assert that financing energy efficiency upgrades is not an option for low-income and extremely low-income households. If financing means taking on a consumer debt obligation, we agree.

However, low-income households *do not need to take on debt* in order to benefit from an offer from their utility to invest in cost effective upgrades that lower their energy bill and improve the comfort of their home – whether they are a renter or owner.

The risk profile of a portfolio developed through a tariffed on-bill investment program does not depend on the income of the building occupants. For this reason, participants need not undergo income qualification or credit qualification protocols to participate in a tariffed on-bill investment program offered by a utility. This addresses one of the important barriers reported by the CPUC to the CEC at the SB350 workshop regarding the reluctance of some households to participate in any program that requires documentation of income.

How does it work?

A utility can offer inclusive financing for cost effective distributed energy upgrades by establishing an opt-in tariff that authorizes the utility to recover its cost with a charge on the bill that is significantly less than the estimated savings.

Utility commissions in multiple states (KS, KY, AR, NH, HI) have approved tariffs for energy efficiency and rooftop solar water heating systems, finding that the terms of the tariff are cost-based, non-discriminatory, and fair.

Pay As You Save® (PAYS®) is the name of a well-vetted system that allows utilities to offer a tariffed on-bill investment program with a high degree of assurance that its costs will be recovered – *regardless of the income, credit score, or renter status of the participants*.

PAYS has proven successful at overcoming barriers associated with multifamily buildings and customers in persistent poverty areas. All programs based on this system have experienced a bona fide offer acceptance rate of more than 50%.

In 2015, PAYS won a Fire Award for high-impact innovation at the Bloomberg New Energy Finance “Future of Energy Summit,” recognizing PAYS for its potential to rapidly accelerate capital deployment for distributed clean energy solutions.

What experience could inform California’s interest in reaching low-income communities?

In Kentucky, Arkansas, and North Carolina, utilities in persistent poverty areas have demonstrated tariffed on-bill investment programs for energy efficiency based on the PAYS system can overcome barriers to serving low-income communities.

In all three states, utilities first tried an on-bill loan product to complement the existing direct install and rebate programs, and in each case, they failed to reach low-income communities. Renters were disqualified routinely, and many low-income households that did own their home would decline or not qualify to take on additional debt.

After switching to a tariffed on-bill investment program, the same utilities reported that more than half of the customers receiving an assessment of cost-effective upgrades accepted the offer for the utility to invest with no upfront cost to the customer and no consumer debt obligation.

A utility in Arkansas with an on-bill financing program offering loans documented that the market demand for the same suite of energy efficiency measures *quadrupled* in the first quarter once the tariffed terms were available.

Already, some California *water* utilities working with BayREN have experience delivering water and energy efficiency upgrades to customers through a tariffed on-bill investment program based on the PAYS system. For an *electric* utility, the set of energy efficiency measures could be much broader, and the same instrument could be applied to distributed renewable energy as well.

Where can the CEC find additional information?

These comments are accompanied by an overview of the PAYS system as well as a summary table indicating programs based on it. Also included is a briefing memo with 10 findings from the first quarter results of a tariffed on-bill investment program compared to the best quarter of an on-bill loan program offered by the same utility.

In addition, the Clean Energy Solutions Center, supported by the U.S. Department of Energy through the Clean Energy Ministerial, has produced an online broadcast on inclusive financing for distributed energy solutions:

<https://cleanenergysolutions.org/training/inclusive-financing-distributed-energy-solutions>

The National Regulatory Research Institute has also provided a briefing on the same topic for utility commissions and their staff:

<http://nrri.org/wp-content/uploads/2016/07/Inclusive-Financing-for-Distributed-Energy-Solutions-NRRI-July-2016.pdf>

Additional information can be found at the Clean Energy Works website or by contacting Clean Energy Works at Info@CleanEnergyWorks.org.

Attachment A: Introduction to inclusive financing for distributed energy solutions

Attachment B: HELP PAYS program update

Attachment C: Overview of programs based on the PAYS system

Attachment A:

Introduction to inclusive financing for
distributed energy solutions

Financing Distributed Energy Upgrades

Pay As You Save[®] and PAYS[®] Opt-In Tariff Model

PAYS is a utility investment solution that offers all customers the option to access cost effective energy upgrades using a proven cost recovery model for both the customer and utility.

Wherever the grid reaches today, utilities have achieved near universal access by recovering investments through an agreement with customers called a *tariff*. Champions of distributed energy solutions don't enjoy tariff authority, which has led to the use of alternatives such as loans or leases. While the distributed energy technologies are scalable, financing instruments used today are not, and many customers are effectively locked out of these investments.

Most financing solutions and incentive programs today are not scalable or do not reach key market segments. PAYS enables a more cost effective way to invest in distributed energy solutions by leveraging the utility business model. It reduces the dependence on incentives and subsidies to cover costs, lowers risk across the value stream, expands the addressable market, and improves performance among providers.

How it works: The utility invests in cost-effective energy upgrades like better building efficiency and rooftop solar. The utility pays the installer, so the customer pays nothing upfront for the upgrades they choose. Using a tariff, the utility puts a fixed charge on the monthly bill that is significantly less than the estimated savings generated by the upgrade - so the customer enjoys immediate and sustained positive cash flow. Until the investment is recovered, the tariff for the PAYS charge applies automatically to future customers at that site.

Several utilities are already demonstrating remarkable results. Thus far, sixteen utilities in six states have led the way, especially in reaching market segments that are hard to serve with traditional financing: renters, moderate-income households, multifamily buildings, and municipal customers. PAYS clears the biggest barriers and expands the addressable market because tariffs do not depend on banks, consumer loans or property liens.

Compared to typical debt-based programs, experience shows that investments based on an opt-in tariff have a bigger impact for four reasons:

- All customers with bill payment history in good standing are eligible for utility investment. As a result, the addressable market is double the size of third party finance solutions.
- When customers receive upgrade offers with the PAYS value proposition, they accept more than half of the time, which is 5 times the typical rate.

Existing portfolio performance

Programs based on PAYS have invested more than \$20 million in resource efficiency. Cost recovery exceeds 99.9%, with reported losses of less than 0.1%.

For the two largest weatherization programs implementing PAYS:

- Average investment per site \$7,000 – includes > \$1,000 incentives or customer copayments.
- Average energy savings reported is 25%.
- Customer satisfaction for participants is reported above 95%, far above general customer base.
- Customers reached include those in market segments that are hard to serve, including renters, multi-family, and municipalities.

- When customers do accept, the projects they undertake are much larger because the terms are more attractive and there is little risk from participating.
- Finally, the investment is more secure because utility collections have a charge-off rate that is approximately 10 times lower than the national average for consumer lending.

The results of efficiency investments are compelling, yielding average energy savings of 25%.

Utility regulators in NH, HI, KS, KY, and AR have already approved tariffs based on the PAYS system. (The utility branded names for those programs include PAYS[®], [Smart \\$tart](#), [Solar\\$aver](#), [How\\$mart[®]](#) [How\\$mart KY[™]](#), and [HELP PAYS[®]](#).) Roanoke Electric in North Carolina has also launched a program this year based on PAYS called [Upgrade to \\$ave](#), and [three](#) water utilities in California run water and energy saving programs based on the PAYS system as well.

Core Elements & General Terms and Conditions for PAYS programs

- Customers voluntarily choose to opt into a tariff that allows a utility invest in upgrades at a site and recover its costs on the bill.
- Cost recovery charges at most implementing utilities has been equal to or less than 80% of the estimated savings, generating immediate net savings to the customer.
- Cost recovery period is not more than 80% of the estimated useful life of the upgrade.
- The utility will only make investments that are cost-effective with the terms above, but the customer can make an upfront payment to cover the cost premium of upgrades that are not cost-effective under current rates.
- The utility may use any source of capital to make the investment, including third-party capital where permitted.
- The investment is tied to the meter, not to the customer, so the cost recovery charge applies automatically to successor customers at that location.
- Energy and water efficiency are considered essential utility services, so the customer can be disconnected for non-payment.
- Capital provider is assured repayment in full by the utility regardless of the actual collections from customers.
- If upgrades stop working for no fault of the customer, the cost recovery charge ends until the efficiency improvement is repaired.
- If repairs are necessary or a property were to remain vacant for a period of time, the term of the tariff may be extended to ensure full cost recovery to the utility.
- The utility may harness multiple benefit streams to pay incentives that help more upgrades meet the threshold for cost effectiveness and qualify for the tariff.
- The utility can cover charge-offs from a variety of sources, including a dedicated loss reserve or from all customers the same as other uncollectibles.
- Utilities capture multiple value streams, including avoided demand charges and avoided energy procurement, to strengthen their balance sheet while lowering customer bills.

Attachment B:

HELP PAYS[®] program update



Update: Performance of Tariffed On-Bill Investment Program

Approved Unanimously by Arkansas PSC Just Prior to NARUC Winter Meeting

July 2016

Six months ago, the Arkansas Public Service Commission voted unanimously to approve an opt-in tariff for cost effective energy efficiency investments.¹

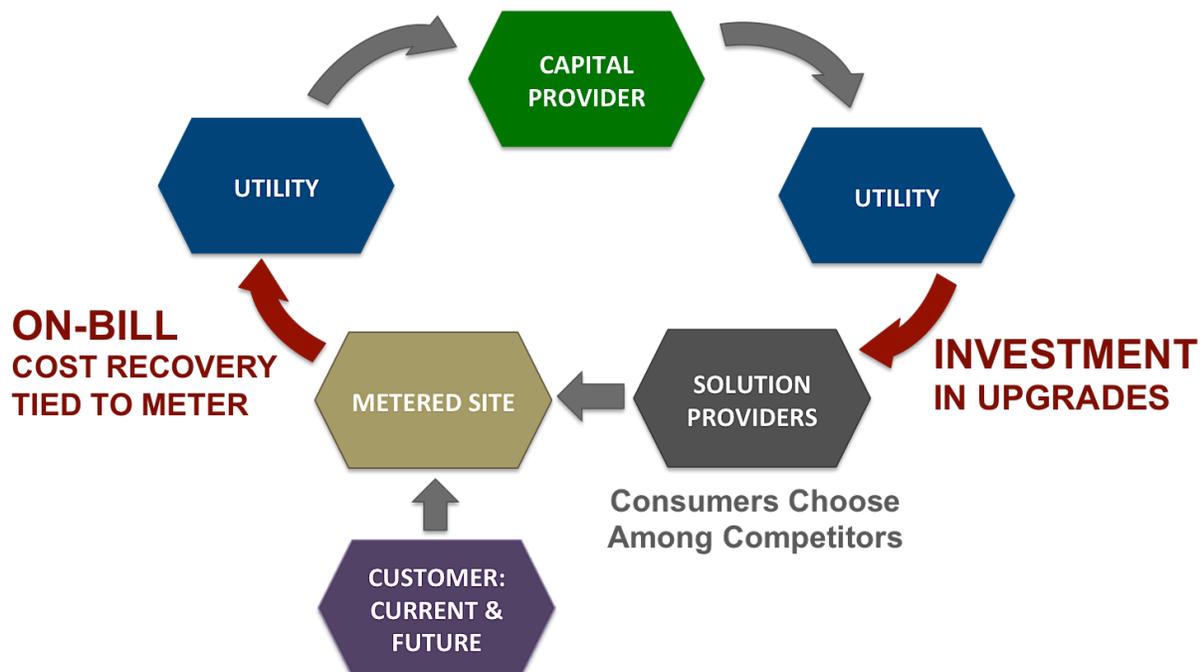
The filing by Ouachita Electric Cooperative replaced its existing on-bill loan program, called HELP, which had been recognized as a best practice model at the DOE Better Buildings Summit.

Within 45 days, the utility switched from offering debt financing to offering to invest in upgrades to customers' homes and buildings, recovering its costs through a Pay As You Save® (PAYS®) Optional On-Bill Tariff Rider with a charge that is less than the estimated savings.

This inclusive financing policy allows the utility to *serve all customers, regardless of income, credit score, and renter status.* The tariffed terms provide immediate net savings for the customer with no new debt obligation. The utility accepts the technology risk for upgrades during the period of cost recovery, and all upgrades belong to the owner once cost recovery is complete.

Pay As You Save® (PAYS®)

PAYS offers all utility customers the option to access cost effective energy upgrades using a proven investment and cost recovery model that benefits both the customer and utility.



¹ Commissions in Kansas, Kentucky, and New Hampshire along with utility oversight boards in California and North Carolina have approved similar tariffs based on the same Pay As You Save (PAYS) system.

Comparing the best quarter with HELP *on-bill loan program* to the first quarter with HELP PAYS® *tariffed on-bill investment program*, Ouachita Electric found:

1. Participation **doubled** with no additional marketing.
2. Participating customers benefited from immediate positive cash flow by keeping 20% of the estimated savings, averaging \$150 a year - compared to zero in a bill neutral loan program.
3. **Renters** accounted for **1/3** of the participants in the first quarter, rather than being ineligible to participate in the previous loan program, and their landlords readily supported the program.
4. In more than 60 multi-family housing units assessed in the first quarter, the utility identified cost effective investment opportunities, and **100%** of those residents **accepted** the offer by opting into the tariff.
5. The average scale of the utility's investments **doubled** compared to the on-bill loan program, reaching \$6,000 and yielding average estimated savings over 30%.
6. The utility's **pace of investment** in energy efficiency upgrades **quadrupled**, topping \$1 million in a single rural county in one quarter.
7. The leading certified building contractor in the program announced it would hire local residents for the new jobs created by the investment program.
8. The utility ended its reliance on a state-funded loan loss reserve because the assurance of cost recovery under the tariffed terms surpassed the prior on-bill loan program. Utilities with similar tariffed on-bill programs report total charge-offs of less than 0.1% of their investments.
9. Even without decoupling, the utility's savings on the cost of wholesale energy and demand charges mitigated more than half of the estimated rate impact of cutting the amount of energy wasted by consumer. Financial analysis of upgrade investments reaching 2.5% of the utility's residential accounts estimated the rate impact to be 0.00021 cents/kWh or 0.2%.
10. Commercial customers also valued the opportunity. A debt-constrained junior college received a \$600,000 investment in lighting upgrades estimated to produce \$20,000 in immediate net annual savings for seven years before quintupling to \$100,000 when cost recovery is complete.

The results of the tariffed on-bill program made Calhoun County in the utility's service area more competitive as a national contender for the Georgetown University Energy Prize, a \$5 million award to communities that showcase solutions for developing a cleaner, more efficient future.



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Attachment C:

Overview of programs based on the
Pay As You Save[®] (PAYS[®]) system



History of Programs Based on PAYS® System

Program	Utility	State	Number of Customers	Inception (yr)	Active (Y/N)	Source of Capital	Program Operator	Projects Completed	Investment Total (\$)	Adoption Rate (%)	Avg. Project Size (\$)	Project Term (yr)	Debt (\$)
PAYS/SmartStart	NHEC	NH	83,000	2002	Y	Conservation Budget & NRECA	Utility	21 (does not include CFL)	\$157,000	NA	NA	5-10	<0.
PAYS/SmartStart	PSNH (Eversource)	NH	500,000	2002	Y	Conservation Fund	Utility	252	\$9M	NA	NA	≈ 8	<0.
Solar Saver Pilot	<i>Consortium</i> HECO MECO HELCO	HI	301,953 70,042 83,421	2007	N	Conservation Budget	Utility	484	\$2.9M	NA	\$5,698- \$6,135	≈ 10	<0.
HowSmart	MidWest Energy	KS	48,000	2008	Y	Various	Utility	1327	\$9.8M	NA	\$7,400	10-15	<0.
HowSmart Kentucky	Big Sandy RECC, Grayson Electric Coop Fleming-Mason Energy Jackson Energy Coop Farmers RECC Licking Valley RECC	KY	12,500 15,000 23,730 51,000 20000 17,000	2011	Y	Various	Third Party	287	\$2.1M	NA	\$ 7,537	Varied	<0.
Upgrade to Save	Roanoke Electric	NC	14,510	2015	Y	USDA EECLP	Third Party	160	\$840,000	NA	\$5,250	10	N
HELP PAYS®	Ouachita Electric	AR	7,100	2016	Y	CFC	Third Party	76 Single Fam; 63 Multi Fam	\$495,678 SF \$412,120 MF	90%	\$6,022 SF \$6,042 MF	10 & 12	N
Windsor Efficiency PAYS®	Town of Windsor	CA	8,000	2012	Y	Utility Operations	Third Party	232 Single Family; 5 Multi-Fam	\$203,000	NA	\$460 Single Family; \$19,220 MultiFamily	5, 10, & 15	<0.