DOCKETED

Docket Number:	16-OIR-02
Project Title:	SB 350 Barriers Report
TN #:	214782
Document Title:	Proposed Errata - SB 350 Low-Income Barriers Study, Part A
Description:	Proposed Errata to the SB 350 Low-Income Barriers Study, Part A with final changes to be considered along with TN214605 at the December 14, 2016 Energy Commission Business Meeting
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Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	12/13/2016 3:23:24 PM
Docketed Date:	12/13/2016

Summary of Proposed Changes to the

Low-Income Barriers Study, Part A: Overcoming Barriers to Energy Efficiency and Renewables for Low-Income Customers and Small Business Contracting Opportunities in Disadvantaged Communities

for Consideration at the December, 2016

California Energy Commission Business Meeting

Page numbers refer to the report posted on December 1, 2016 that does not show changes in underline-strikeout (docket number 16-OIR-02, TN#214605). Added text is shown in underline; ~~deleted text shown in strikeout.~~

Acknowledgements, Page i

California Energy Commission staff would like to thank the following ~~individuals and~~ organizations, including but not limited to the individuals identified, ~~groups and individuals~~ for their invaluable assistance in developing ~~and preparing~~ this ~~staff~~ ~~draft~~ report:

Asian Pacific Environmental Network
Parin Shah
Amee Raval
Sydney Fang
Jing Jing He

BayREN
Gerald Lahr

BlueGreen Alliance
Ross Nakasone

Brightline Defense Project
Eddie Ahn

Energy Commission
Kevin Barker
Emilio Camacho
Rhetta DeMesa
Bryan Early
Jennifer Nelson
Eunice Murimi
Galen Lemei

California Alternative Energy and Advanced Transportation Financing Authority
Deana Carrillo
Bettina Redway

California Air Resources Board
Ashley Dunn

California Association of Realtors
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California Department of Community Services and Development
Chuck Belk
Linné Stout
Jason Wimbley

California Environmental Justice Alliance
Strela Cervas

California Municipal Utilities Association
Justin Wynne

California Public Utilities Commission
Melicia Charles
Jeanne Clinton
Hazlyn Fortune
Lola Odunlami
Shannon O'Rourke

California Solar Energy Industries Association
Bernadette Del Chiaro

California Workforce Development Board
Tim Rainey
Sarah White

Robin Purdy

Center for Community Action and Environmental Justice
Graciela Larios
Michele Hasson
Ericka Flores

Center for Sustainable Energy
Stephanie Wang

Clean Energy Works
Holmes Hummel

CleanPath Ventures
Matt Cheney

Community Energy Services Corporation
Martin Bond

Communities for a Better Environment
Shana Lazerow
Dilia Ortega
Darryl Molina Sarmiento

El Dorado County Water Agency
Ken Payne

Energy Conservation Options
Dahlia Moodie

Energy Efficiency Council
Allan Rago
Anna Solorio

Enervee
Anne Niederberger

Environmental Defense Fund
Jayant Kairam

Everyday Energy
Scott Sarem

GREEN-Energy Efficiency for All
Stephanie Wang

Greenlining Institute
Sekita Grant
Stephanie Chen

GRID Alternatives
Stan Greschner

Humbolt County
Philip Young

International Brotherhood of Electrical Workers
Johnny Simpson

Interstate Renewable Energy Council
Erica McConnell

Johns Mansville
Bruce Ray

Leadership Counsel for Justice and Accountability
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Northern Circle Indian Housing Authority
Darlene Tooley

Pacific Gas & Electric
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Proteus Inc.
Janine Medina

Renew Financial
Colin Bishopp

Richard Heath and Associates
Cynthia Bruno

Rick Brown

Rising Sun Energy Center
Melvin Parham

Sacramento Municipal Utility District
Timothy Tutt

Sierra Climate Adaptation and Mitigation Partnership
Diana Madison

Sierra Business Council/Sierra CAMP
Diana Madson

Sierra Club
Eddie Moreno

The Shift Model
Marti Frank

SolarCity
Damon Franz

SoCalGas
Regina Lugani

Southern California Edison
Catherine Hackney

Stone Energy Associates
Nehemiah Stone

StopWaste
Heather Larson

Strategic Concepts in Organizing and

Policy and Education/RePower LA
Laura Muraida
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Strategic Growth Council
Allison Joe
Monica Palmiera

Sustainable Energy Solutions
Bernie Kotlier

TRC Energy Services
Sophia Hartkopf

UC Berkley Labor Center

UC San Diego Strategic Energy Initiatives
Byron Washom

Vote Solar
Susannah Churchill

Yolo Housing
Lisa Baker

Executive Summary, page 5-6 (recommendation # 1):

1. The State should establish a task force to facilitate coordination of all state agencies administering energy, water, resilience, housing, and low-emission transportation infrastructure programs for low-income customers and disadvantaged communities. To reach more customers, the task force should seek to align program eligibility requirements and reduce redundancies and administrative overhead. ~~It~~This effort should encourage~~should require~~ collaboration, standardization, streamlining, integration, and cofunding opportunities with related federal, state, and local agencies, including actions to:
    a. Expand existing direct-install energy programs to include upgrades for water-efficient appliances for customers in low-income and disadvantaged communities. ~~Programs should be aligned to reduce redundancies, administrative overhead, and reach more customers.~~
    b. Initiate pilot programs that address entire neighborhoods in disadvantaged communities, rather than building-by-building. Future expansions could include neighborhoods outside disadvantaged communities but that include a significant proportion of low-income households.
    c. Ensure that energy retrofit programs facilitate access to available funds from programs that address non-energy work, such as asbestos, lead, and mold removal and structural maintenance so that work can be conducted in conjunction with energy upgrade projects. Explore the potential for energy upgrade programs to coordinate with local housing rehabilitation efforts in low-income and disadvantaged communities.
    d. Develop a comprehensive action plan on improving opportunities for energy efficiency, renewable energy, demand response, energy storage, and electric vehicle infrastructure for multifamily housing, with attention to pilot programs for multifamily rental properties in low-income and disadvantaged communities.
    e. Engage with the federal government to explore program development opportunities, share best practices, and leverage research and cofunding potential for all energy, water, and housing programs.
    f. Ensure all state programs identify and prioritize best practices in other states with high-functioning programs that serve low-income and disadvantaged communities.
    g. Leverage local government planning initiatives to enhance low-income clean energy deployment programs.
    h. Establish common definitions of non-energy benefits, develop standards to measure them, and attempt to determine consistent values for use in all energy programs.

i. Establish an expert advisory committee to align future low-income program modifications with the latest market trends and industry best practices. This committee should be comprised of representatives from clean energy finance, information technology experts, building property owners, and other marketplace actors with expertise needed to design and implement effective financial, housing, and related energy service programs for low-income customers and disadvantaged communities.

j. Use program data resulting from recommendation #5 to inform actions taken by the task force.

Executive Summary, page 6 (recommendation # 3):

1. The Energy Commission, ~~and~~ California Public Utilities Commission (CPUC), and California Department of Community Services and Development (CSD) should partner with the California Labor and Workforce Agency, the Workforce Investment Boards, community colleges, and other agencies, as well as consult with employers, the UC Berkeley Labor Center and the relevant trade unions and community-based organizations, to strategize and track progress of workforce, community, and clean energy goals. This strategy should consider the following:

    a. The Legislature should establish a green workforce fund to allow state-administered clean energy and ~~clean~~ transportation ~~infrastructure~~ programs to include a local workforce development component for low-income and disadvantaged communities. This workforce development should be provided through direct hiring and training, through community-based organizations that have demonstrated to have hired and trained locally, or with organizations that run pre-apprentice or apprenticeship programs.

Executive Summary, page 7 (recommendation # 4):

4. The State should continue developing a series of energy upgrade financing pilot programs to evaluate a variety of models to improve access and participation of low-income customers, including those in disadvantaged communities. The pilot programs would include the cost of health and safety measures required to accomplish energy efficiency upgrades. Possible pilots include:

    a. The CPUC should consider developing a tariffed on-bill pilot for investments in energy efficiency that targets low-income customers regardless of credit score or renter status, and that do not pass on a debt obligation to the customer. Utilities could use the program to make energy upgrade investments and recover the cost through the bill, so long as the recovery charge is less than the estimated savings. The Energy Commission should encourage and provide technical assistance to ~~help implement a tariffed on-bill program among~~ POUs and ~~rural~~

~~electric cooperatives~~ other load-serving entities seeking to implement a tariffed on-bill pilot.

Executive Summary, page 7 (recommendation # 5):

2. The Legislature should require collaboration among all program delivery agencies to establish common metrics and collect and use data systematically across programs to increase the performance of these programs in low-income and disadvantaged communities, including requirements to:

    a. Develop standardized energy equity indicators as metrics to ensure low-income customers are being served. Use these metrics to set a statewide baseline, advance energy savings, and track performance.

    b. Target program services to increase coverage and improve equity.

    c. Develop a common database for use by program delivery agencies and other community partners.

    d. Use market intelligence to achieve data-driven program design and target best intervention strategies that serve low-income needs.

    e. Ensure that low-income persons have product selection options and information necessary to avoid driving up their plug-load energy use, recognizing that low-cost appliance and consumer products are commonly less energy-efficient than other appliances and products.

    f. Ensure that program participation includes a condition for permission to access participant, project, and pre-/post-consumption data by the State to enhance service delivery, evaluation, and planning. Where viable, such data should be made public.

    g. Establish standardized metrics to track employment and job quality impacts of clean energy programs.

Executive Summary, page 9 (recommendation # 8):

8. The State, in consultation with Energy Commission, CPUC, ARB, ~~California Department of Community Services and Development (~~CSD~~)~~, and other related state and local agencies, should establish a pilot program for multiple regional one-stop shops to provide technical assistance, targeted outreach, and funding services to enable owners and tenants of low-income housing across California to implement energy efficiency, clean energy, zero-emission and near-zero emission transportation infrastructure, and water-efficient upgrades in their buildings. This pilot program should also support a range of local service delivery providers, coordinate with local government energy programs, and leverage existing Web portals, such as Energy Upgrade California®, with information provided in a variety of languages and in a format relevant to local low-

income communities. Regional pilot programs should build on the best models for comprehensive one-stop models both in California and other states.

Executive Summary, page 9 (recommendation # 11):

11. The Energy Commission and CPUC should direct research, development, demonstration, and market facilitation programs to include targeted benefits for low-income customers and disadvantaged communities.

    a. The Energy Commission's Electric Program Investment Charge (EPIC) Program should target a minimum of 25 percent of technology demonstration and deployment funding for sites located in disadvantaged communities.

Chapter 2, page 28, Table 1:

Table 1: Low-Income Energy Programs

Agency	Program Name	Purpose	Eligibility Definition & Upper Threshold Example for Los Angeles Family of Four	Funding
CSD	Low-Income Home Energy Assistance Program (LIHEAP)	energy bill assistance and crisis, weatherization	60% of state median income. *Upper Threshold: $48,275*	Bill Assistance: ~~$176.5M~~132.4 M (2016) Weatherization: $44.1M (2016)
CSD	Weatherization Assistance Program (WAP)	weatherization	200% federal poverty level. *Upper Threshold: $48,600*~~60% of state median income. *Upper Threshold: $48,275*~~	$5.8M (2016)
CSD	California Low-Income Weatherization Program (LIWP)	solar, weatherization	60% state median income and in disadvantaged area (80% of area median income (AMI) for PV). *Upper Threshold: $48,275*	$174M (~~2016~~total)
CPUC	Single-Family Affordable Solar Homes Program (SASH)	solar	80% of AMI, single-family homeowners. *Upper threshold: $49,920~~69,450~~*	$162M (total)
CPUC	Multifamily Affordable Housing Solar Homes Program (MASH)	solar	multifamily housing; local hiring requirement	$162M (total)
CPUC	California Alternate Rates for Energy (CARE)	energy bill assistance (30-35% discount on electricity and 20%	200% federal poverty level. *Upper Threshold: $48,600*	$1.281B (2016)

		discount on natural gas)		
CPUC	Family Electric Rate Assistance Program (FERA)	energy bill assistance (12% discount on electricity)	250% federal poverty level. *Upper Threshold: $60,750*	$7.43 M (2015)
CPUC	Energy Savings Assistance Program (ESAP)	weatherization	200% federal poverty level. *Upper Threshold: $48,600*	$391M (2016)
CEC	New Solar Homes Partnership (NSHP)	solar	newly constructed single family and multifamily housing	$25.8 (total for affordable housing projects)

Chapter 2, page 21 (new footnote):

According to survey data, 66 percent of eligible households were enrolled in CARE (Evergreen Economics, 2016).[11]

Chapter 3, page 31 (amended footnote):

Finally, military households living in on-base housing are an often overlooked example of split incentives, since some of these families are low-income and base housing administrations are a single ownership entity.[29]

Chapter 3, page 32:

This program would require the utility to finance the upgrade investment cost or facilitate capital commitments for those investments~~obtain lending partners~~. A ~~loan-loss~~reserve fund established by the State could be useful to insure utilities against charge-offs of uncollectible program service charges billed to participants for cost recovery~~energy upgrades that fail to produce anticipated savings~~. Any upgrades would likely require permission from the landlord, but there would be no landlord debt obligation or property lien.

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[11] The methodology employed by Evergreen Economics may underestimate the percentage of enrollees in CARE, as SCE points out. SCE estimates that, within its jurisdiction, 82 percent of eligible CARE customers are enrolled in the program. See SCE, written comments, December 8, 2016, http://docketpublic.energy.ca.gov/PublicDocuments/16-OIR-02/TN214705_20161208T150856_Andrew_Dugowson_Comments_SCE_Comments_on_SB_350_Recommendations.pdf

[29] Indeed, military housing can be particularly challenging to target in situations where the housing is connected to a federal grid, rather than a state utility. Some potential solutions are in the works for targeting military housing. Virtual net metering can expand the scope of possibilities for rooftop solar in military housing, particularly for buildings that are master-metered. CPUC's ~~current~~ latest energy efficiency proceeding may increase options for upgrading military housing through a utility program. See CPUC Decision 14-11-007, http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M169/K716/169716736.PDF. Additionally, SolarCity notes that it has partnered with owners of privatized military housing to install over 8,000 solar systems throughout the state, and has plans to install an additional 10,000 in 2017. See SolarCity, written comments, December 8, 2016, http://docketpublic.energy.ca.gov/PublicDocuments/16-OIR-02/TN214708_20161208T154814_Francesca_Wahl_Comments_SolarCity_Comments__Revised_Staff_Draft.pdf

Chapter 3, page 35:

Even for the minority of low-income customers who own their homes, ~~Low~~low-Income homeowners who have limited disposable funds may be more risk-averse and less capable of participating in energy upgrades with high up-front payments or copayments. Competing needs, such as child care or medical expenses, may further diminish a low-income household's ability to contribute up-front funding for an energy upgrade program. At the same time, lack of collateral and poor credit may restrict access to financing options.

A recent study suggests that households with incomes ranging between $40,000-$55,000 have made up a greater share of total solar installations since 2008.[43] However, households under $40,000 appear to have made little progress over the same period.

Chapter 3, page 37:

Low-income customers are more likely to have poor credit scores, which can preclude them from participating in lease financing and PPAs (Sanders and Milford, 2014).[49] ~~However, Sanders and Milford (2014) note that "lease financing and PPAs, which avoid the upfront costs, are generally unavailable to low-income customers who often have an inadequate credit history to be able to enter into a solar lease agreement."~~ In California, a FICO score of 650 is typically the threshold for accessing financing such solar arrangements. One commenter suggested that credit enhancements could help expand low-income customers' access to PPAs and leases.

Chapter 4, page 50:

CPUC notes that the energy retrofit industries need better regulation to prevent predatory sales practices, an issue that is particularly acute for low-income customers.[81] Low-income program requirements could impose such standards through provider eligibility rules, though care must be taken to balance program requirements with increased costs that may limit participation. At the same time, California SEIA points out that it has spearheaded several consumer protection initiatives performed within the industry.[82]

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[43] Kevala Analytics' study finds that between 2008-2015, solar installations in zip codes with an average household income between $40,000-$55,000 increased from 22 percent to 28 percent of total installations. For zip codes with an average household income below $40,000 over the same period, the figure increased from 4 percent to 6 percent. See Kevala Analytics, 2015, *White Paper: Income Distribution of Rooftop Solar Customers*, https://www.kevalaanalytics.com/whitepaper-income-distribution-of-rooftop-solar-customers-2/

[49] Available data indicates a correlation between low-income households and low credit scores. See Board of Governors of the Federal Reserve System, 2007, *Report to the Congress on Credit Scoring and Its Effects on the Availability and Affordability of Credit*, https://www.federalreserve.gov/boarddocs/rptcongress/creditscore/creditscore.pdf

[81] CPUC, comments at the SB 350 Low-Income Barriers Study workshop, August 12, 2016. Furthermore, as one step toward improving consumer decision making processes, CPUC Decision 16-01-004 directs the CPUC to issue information packets to consumers.

[82] ~~At the same time, California SEIA points out that it has spearheaded several consumer protection initiatives performed within the industry.~~ See CalSEIA, written comments, October 28, 2016, http://docketpublic.energy.ca.gov/PublicDocuments/16-OIR-02/TN214238_20161028T155803_Kelly_Knutsen_Comments_Comments_of_the_California_Solar_Energy.pdf.

Chapter 4, page 55-56:

Potential changes to the net metering tariff offered by utilities~~(scheduled to be revisited by the CPUC in 2019)~~ may ~~create~~ result in additional barriers for low-income customers, if they include reductions to customers' compensation for exporting onsite generation.[98] ~~However~~At the same time, Assembly Bill 327 (2013) instructs the CPUC develop alternative tariffs to ensure continued growth of distributed generation among residential customers in disadvantaged communities.

Chapter 5, page 82:

As part of this collaboration, a roadmap with recommendations on how California can improve clean energy workforce and job placement policies within disadvantaged and low-income communities may be helpful. Such a roadmap would promote solutions that improve and scale successful workforce, education, and training programs in the clean energy industry and effectively connect participants to clean energy jobs with competitive wages, job security, and career opportunities. Furthermore, recommendations should be actionable, increase job placement rates for disadvantaged and low-income community members, and build and promote ~~job pipelines~~ career pathways that create opportunities for higher-paying and more sustainable jobs in the clean energy industry.

[98] California SEIA notes that some POUs have already met the state requirement (AB 510, 2010) to offer net metering contracts for up to 5 percent of peak load. See CalSEIA, written comments, December 8, 2016, http://docketpublic.energy.ca.gov/PublicDocuments/16-OIR-02/TN214702_20161208T070438_Kelly_Knutsen_Comments_Comments_of_the_California_Solar_Energy.pdf ~~, comments at the SB 350 Low-Income Barriers Study workshop, August 12, 2016~~.