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350 Recommendations for Jobs, Workforce Training, and Small Business Opportunities

Additional submitted attachment is included below.

SB 350 CLEAN ENERGY JOBS & ECONOMIC OPPORTUNITIES
COMMENTS & RECOMMENDATIONS

As the state of California carries out mandates set forth under the Clean Energy and Pollution Reduction Act of 2015 (SB 350) and continues its transition to a clean energy economy, it must create opportunities that place residents from disadvantaged and low-income communities in clean energy jobs that provides the workers competitive wages, job security, and an upward mobility in their career. State and local agencies, as well as the private sector, must also pave a way for small businesses to equally benefit from the opportunities that are available in California's green economy. Finally, the research, development, and deployment supporting future generations of clean energy technologies must also uplift the priorities outlined in this document.

To better understand current barriers preventing disadvantaged and low income communities from accessing and thriving in clean energy jobs, the Greenlining Institute (Greenlining) and the Asian Pacific Environmental Network (APEN) gathered clean energy and workforce policy experts to discuss the community challenges and policy solutions that the CEC should address in its Barriers Study. APEN and Greenlining co-hosted the workshop on Wednesday, July 20, 2016 at APEN's downtown Oakland office. The discussion in this workshop occurred both in-person and remotely, via conference phone line.

These comments and recommendations are based on conversations from the workshop and additional research and amendments by expert stakeholders. Organizations that contributed to and support this document are APEN, Brightline Defense Project, Center for Sustainable Energy, Coalition for Clean Air, Energy Solidarity Cooperative, the Greenlining Institute, Jobs to Move America, Rising Sun Energy Center, and Strategic Concepts in Organizing & Policy Education (SCOPE LA).

The following sections cover three major discussion topics raised in the workshop:

1. Workforce education and training (WE&T)
2. Job placement
3. Small business opportunities

WORKFORCE EDUCATION & TRAINING RECOMMENDATIONS

I. Introduction: The Need for Effective Workforce Education and Training Programs in California

California's transition into a clean energy economy in accordance with the Clean Energy and Pollution Reduction Act of 2015 (SB 350) necessitates active participation of *all* Californians, which includes workforce from disadvantaged and low-income communities. In order for that to happen, state and local leaders, as well as private industry, must specifically and intentionally address the needs and interests of these communities.

The fact that disadvantaged and low income workforce have very limited access to well-paying jobs in the renewable energy and energy efficiency industry is an issue that agencies, policy makers, community advocates, and community members continue to grappled with every day. SB 350 created ambitious clean energy goals that are necessary to propel California towards a cleaner and healthier environment. Such goals require the state's decision makers who are tasked with achieving them to develop equally ambitious policies and strategies. Workforce will undeniably play a huge role in the implementation of SB 350. However, California's renewable energy and energy efficiency industries' existing workforce policies and regulations are not suited to meet our new goals. Thus, we need to re-examine the state's policy in addressing workforce inclusion, training, and placement. To solve the workforce inclusion problem, policymakers must focus on understanding, improving, and scaling WE&T programs that target disadvantaged and low-income communities. Policymakers must also create a robust policy that will help transition trained workers from their entry-level positions into career pathways that will lead them to sustainable wages and secured jobs.

Effective WE&T and clean energy pathway policies work hand in hand. Improving and strengthening WE&T programs across the state will build more pathways into well-paying and sustainable clean energy jobs for the state's most marginalized communities. At the same time, well-developed career pathway programs will lead to further improvements in an inclusive education and training programs for our workforce in the ever-advancing clean energy field.

II. Recommended Strategies to Improve WE&T Programs

Effective WE&T programs must balance two crucial pieces:

(1) a deep and specific understanding of the marginalized communities they serve; and,
(2) a dynamic, relevant, and predictive understanding of the job market, hiring industries, and hiring practices.

In order to accomplish this balance, WE&T programs must first of all measure their success in terms of *job placement rates*, rather than in terms of program graduation rates. Many WE&T programs fill up quickly and run at capacity, but still do not guarantee job placement post-graduation. Particularly for members of disadvantaged and low-income communities, who already face compounding barriers to gainful employment, specific strategies that have a track record of

high placement rates into high-road jobs should be put in place, including pre-apprenticeship programs that are linked to apprenticeship programs; targeted and local hiring language in project labor agreements (PLAs) or community benefits agreements; or other first source agreements that are linked to high-road, family supporting jobs.

In order to improve job placement rates upon WE&T program completion for members of disadvantaged and low-income communities, the state should consider these bold and actionable strategies:

Improve outreach to most marginalized demographics: While several WE&T programs report high enrollment numbers, improving outreach to the most vulnerable Californians should be a priority. Those most likely to be excluded by the "green divide" include: non-English speakers, high school-age people, the very poor, and those living in rural communities. Therefore, WE&T programs should specifically target these demographics, to offer them the skills to transition into well-paying, long-lasting, family-sustaining, clean energy jobs.

Actionable outreach strategies to target these marginalized communities can include:

- *Advertise WE&T programs in multiple languages:* In addition to ideally holding WE&T programs in languages other than English, sharing information about the programs themselves in languages other than English is critical to entering linguistically isolated communities. These can include working with ethnic radio and media outlets and translating flyers and promotional information into other languages.
- *Connect young people to pre-apprenticeship programs:* Young people not pursuing higher education deserve skills that will contribute to well-paying, long-lasting careers. For instance, the San Francisco United School District is prioritizing alternatives for these students outside of 'traditional school.' Some unions offer pre-apprenticeship programs, which could offer strong pathways for these young people. There is still a great need for funding for these programs. Where available, pre-preapprenticeship programs can help build pipelines into pre-apprenticeship programs by assisting trainees to fulfill remedial math and science or GED requirements. Especially as public works populations age, incorporating more young people into these sectors is critical.
- *Partner with local community-based organizations (CBOs) and local labor unions to access projects in rural communities and employ local residents*: Especially outside of large urban areas, WE&T programs should partner with local CBOs to engage with underrepresented communities. In underserved areas with limited transportation and communication technology, reliance upon these relationships is critical: otherwise, the state may lack local legitimacy in the eyes of its residents. Rural and suburban residents, too, are also likely to require their own pipelines based on geographical needs. Due to the presence of large-scale renewable energy projects in rural areas, which tend to be union jobs, partnering with local unions to better engage with these rural communities is also recommended. Together, CBOs and unions need to ensure apprentices are recruited from rural areas and supported through the apprenticeship system.

Address barriers facing members of disadvantaged and low-income communities to support their successful completion of WE&T programs and subsequent job retention: Given the compounding barriers that continue to exclude the most marginalized Californians, WE&T programs need to specifically address the barriers facing disadvantaged and low-income communities to ensure their ability to attend, afford, complete, and graduate from WE&T programs. These barriers can include: language, transportation, geography, affordability, homelessness, addiction and substance abuse, a criminal record, inability to afford lunch, lack of a driver's license, and lack of childcare.

Strategies to address these barriers include:

- Individual case management staff to tailor plans for the individual student (e.g. pre-apprenticeship programs offering remedial math is necessary for some)
- Specific catalogue of barriers to employment for individual at entry into program, any barriers addressed or overcame during training, and barriers navigated 12-months after graduation from program
- WE&T programs in multiple languages, to combat linguistic isolation
- Enrollment in Vocational English as a Second Language (VESL) courses (the state is still in initial stages of crafting vision for ESL programs for statewide workforce)
- Worker vanpools and rideshare options, or bus passes and other means to afford public transportation, both en route to WE&T locations and eventual job sites
- Stipends for trainees as they complete traditionally unpaid training programs, such as pre-apprenticeships, to compensate for income lost during program attendance
- Education around Prop 47, which allows certain felonies to be written down to misdemeanors, to include those in the criminal justice system
- Free lunches provided for qualifying participants
- Free childcare service during training classes

Even after former training participants have found successful employment, these barriers to employment may remain. We therefore recommend ongoing support to keep a job, ideally in the form of alumni meetings, continued workshops, peer mentoring, and additional training modules. This range of support would specifically focus on retaining employment. To accomplish this, funding for such programs should tie both to outcomes from training programs themselves, but also retention rates down the line.

Develop a strong relationship between WE&T programs and employers such as contractors or labor unions: In order to improve job placement rates, WE&T programs should build and sustain relationships with prospective employers, such as contractors or unions. By engaging potential employers as active stakeholders in the WE&T program's success, such programs can build trust, ensure jobs exist post-graduation, and invite constant feedback from hiring industries.

Simultaneously, prospective employers can help develop curricula and share what kinds of jobs are available. Strengthening these relationships is critical to the success of both the demand and supply sides, especially when working with target communities. Strategies to engage prospective

employers to improve this job-placement mechanism include: creating an employer council; hosting job fairs; collaborating on curricula development; and offering on-site trainings.

The clean energy economy must support a stronger connection between jobs available and workforce training in order to have an accessible and effective career pathway. California has not yet identified all of the available clean energy jobs or matched those jobs with career pathways. There needs to be a connection between training and placement that is consistent and more transparent to the public. The importance of this connection to successful job placement of disadvantaged and low-income workforce will be further discussed in the Job Placement section below.

There is also an opportunity to use the Workforce Innovation and Opportunity Act which requires regional career pipeline planning to enable more of this work. Regional workforce and investment plans are another critical venue to uplift the importance of creating industry-recognized career pathways. Within this work there needs to remain a focus on providing points of entry and creating a supportive environment so that employees have opportunity for growth. Sponsored by the U.S. Department of Labor, O*NET is a good resource for supporting career pathways, but it is currently underutilized.

Strengthen WE&T program connection with multifamily building owners and renters: Low-income multifamily building renters make up a significant portion of energy utility customers in California.[1] Owners or managers of multifamily buildings play a huge role in determining whether these renters will have access to renewable energy or have energy efficient homes. As it is true with most energy customers, embarking on renewable energy or weatherization projects can be challenging and overwhelming for many building owners who are looking for the most cost-effective way to provide safe and reliable energy to their tenants. Additionally, building owners and tenants have unique barriers to participation in the state's clean energy and energy efficiency programs. Building trust between the owners, tenants, and energy program administrators is an important step to overcoming the challenges and barriers to participation. Building owners need to guarantee that they are investing in effective energy improvement projects, which are carried out by highly-trained workers. Renters need the assurance that they are safe when workers enter their homes and that the energy projects will provide them some form of benefit. Since workers are usually the ones who personally go out and meet owners and tenants, they have the ability to facilitate the successful process of improving the building's energy performance and transitioning to cleaner energy. A well-trained workforce can educate the customers on the benefits of participation and assist in finding ways to coordinate funding and resources from various local, state, and federal energy programs. While these kinds of relationship currently exist, there is much room for improvement. For example, a building owner can qualify for the Multifamily Affordable Solar Housing (MASH) program by meeting the minimum requirement of an American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Level 1, onsite walkthrough energy efficiency audit,[2] which is practically an equivalent of a quick walking tour of a building. This

[1] Approximately one-third of households in California live in multifamily buildings. California Public Utilities Commission, CA Energy Efficiency Strategic Plan, January 2011 Update, *at* 9.
[2] CPUC MASH Program Handbook, *available at* www.gosolarcalifornia.ca.gov/documents/MASH_Handbook.pdf

process does not provide the kind of interaction between the worker/auditor and building owner to identify the owner's and renters' needs and the available programs that can help address them. The state can further grow and strengthen these relationships by developing energy programs that intentionally connect the customers with the state's workforce.

Update WE&T program curricula structure and incorporate clean energy focus: In order to create high-road, clean energy job pathways that align with available jobs, effective WE&T program curricula should be easy to update and offer a comprehensive understanding of the clean energy sector. Rather than completely redoing existing curricula, and to ensure that future updates are as easy to incorporate as possible, we recommend adopting module-based programs where modules reflect current demands and technologies of the market. CityBuild Academy's module-based curriculum is a model here (See 'Effective WE&T Programs' section for more information).

Since green-specific training programs tend to be too narrow and limiting for job-seekers in the long-term, we recommend incorporating this clean energy focus into existing WE&T program curricula. CityBuild also offers this approach: their curriculum revisions now incorporate "green" knowledge, skills, and abilities into the existing structure. Rather than developing separate SB 350 programs, we recommend incorporating clean energy or technology-specific trainings into existing curricula, specific to industries actively hiring on the other side, and ultimately preparing graduates for clean energy occupations and careers.

Expand skills taught in WE&T programs to improve job readiness and skill transferability: Effective WE&T programs incorporate both classroom sessions and hands-on trainings to prepare prospective graduates to immediately enter the workforce after program completion. In addition, we recommend including soft skills and life skills trainings in programs for entry-level positions to further improve job readiness and ensure graduates can both get and keep a job. These skills might include coping with trauma, mental health challenges, and other barriers to gainful employment; Rising Sun's employers, for example, also recommend skills like accountability, time-keeping, communication, conflict resolution, et al. Other examples include classes focused on solar, sales, and marketing. Additionally, we recommend training not just popular skills with a low barrier for entry like solar panel installation, but also high skills like electric retrofitting and entrepreneurship.

Furthermore, WE&T program curriculum should support building transferable skills. To this end, agencies and organizations can require that activities relate to recognized career pipelines, produce industry recognized certifications, and ensure transferability of skill requirements between various programs. Linkages between various programs should be well articulated and there should be better tracking of individuals who have chosen to enter into certain programs so we know what is working. Thus entry level trainings that include soft skills as described above should provide pathways into higher skills training in occupations such as electricians, and electrical contractors and other industries that will play an essential role in the low-carbon transition.

Invest in WE&T program staff and facilities to expand training capacity and offer case management: Given the wide array of skills necessary in developing a robust workforce from disadvantaged and low-income communities, WE&T programs need to increase their training capacity. According to some apprenticeship programs, current limits on training capacity have resulted in waitlists, which only exacerbate the stressors of unemployment and underemployment.

As mentioned previously, individual case management would most effectively ensure that WE&T program trainees not just attend classes, but successfully graduate from the program, find a job, and keep that job. Funding WE&T program staff appropriately, therefore, is a key investment.

Build strong pre-apprenticeship programs: Effective and accessible pre-apprenticeship programs are critical to building a diverse and inclusive clean energy workforce and should be supported and funded by the state and local agencies, as well as private clean energy businesses. Strong pre-apprenticeship programs are particularly important for groups with higher levels of barriers to employment, but there is currently a lack of funding for programs filling this need. These programs should be linked to a certified job placement programs or state-certified apprenticeship programs and provide critical training on remedial and "soft" skills needed to join the workforce. Organizations such as Green Education Inc., Energy Solidarity Cooperative, Rising Sun, RichmondBUILD, SCOPE LA, and Green Technical Education and Employment provide successful models for remedial and 'soft' skill trainings. Since many pre-apprenticeship programs have enrollment requirements like a GED or 8th grade math, we also recommended specific support to help individuals fulfill those requirements (also called pre- pre-apprenticeship programs).

Engage with local unions that are inclusive of disadvantaged and low income workers: It is critical to have a strong relationship with local building trades that are inclusive of a disadvantaged and low-income workforce. Apprenticeship programs in most labor unions provide a structured career pathway, specified wage increases as workers gain skills, as well as industry-recognized certifications.

There are at least two potential ways that investor-owned utilities (IOUs) and the California Public Utilities Commission (CPUC) could increase or enhance engagement with labor unions and their respective skilled workforce when it comes to the energy efficiency sector. First, the CPUC should address the Don Vial Center's Report and Recommendations on the IOUs' energy efficiency workforce. The Don Vial Center assessed the workforce skills and standards of current CPUC energy efficiency programs and produced recommendations on these issues[3]. In addition, the CPUC could conduct an assessment of utility training and employment programs (e.g., PG&E's Power Pathways Program) in order to identify challenges and best practices that can be appropriately shared across the utility sectors. This assessment should also explore ways to better recruit and train job-seekers from disadvantaged backgrounds.

Second, the CPUC could encourage or require the IOUs to increase energy efficiency programs targeting the building sectors in which labor unions are mainly involved (viz., the municipal, university, school, and hospital [MUSH]; large commercial; and industrial sectors). Particularly with an aging workforce, partnership with local unions that demonstrate an inclusive and diverse workforce can identify sectors and locations where this demographic shift present the greatest challenges and opportunities.

Collect better data and use metrics to drive WE&T program capacity, direction, and placements: Given how siloed much of the funding and WE&T programs themselves are, reliable and sharable data has been a challenge. In order to better monitor and evaluate these programs,

[3] Donald Vial Center on the Green Economy, "Workforce Issues and Energy Efficiency Programs: A Plan for California's Utilities," (2014), *available at* http://laborcenter.berkeley.edu/workforce-issues-and-energy-efficiency-programs-a-plan-for-californias-utilities/

specific data collection of current conditions is necessary. Some helpful metrics to include might be: number of trainees per program, trainer background, specific skills taught, hours of instruction, and post-program placement. With stronger and more specific data in hand, the state can set clear targets delineating recruitment, enrollment, graduation rates, and job placement rates for underrepresented demographics.

Conduct periodic assessment of workforce development and growing job markets: A lack of transparency about workforce development and growing job markets has contributed to a misalignment between WE&T programs and available jobs. Therefore, a periodic assessment across industries would help ensure that WE&T program curricula converge with available jobs, so job placement rates for graduates will increase. There is concern that employers might flood the market with skilled workers without enough available jobs. This can lead to a large unemployed workforce and the potential for lower wages for those jobs that are available.

We recommend that the state use an objective third party conduct this assessment of WE&T programs. For instance, some programs have shifted from solar to energy efficiency trainings, in order to better ensure their graduates access to long-term, stable employment with family-friendly wages. Much of these predictors of the market will depend on how much is invested in retrofit and construction. More transparency around these investments will enable the state to better direct WE&T program capacity, direction, and placements.

Establish long-term state support of clean energy industries: One of the challenges identified is the temporary life of program subsidies focused on particular parts of the market. Given their limited duration, these subsidies may not create sustainable pathways. For instance, solar companies may pull out of California when subsidies dry up in other states. In these cases, people trained in solar industry-specific skills may not have sustained employment options. By establishing longer-term support of specific industries, the state can help protect the continued growth of certain clean energy industries and thereby ensure that WE&T programs teaching those specific skills will promise their graduates clean energy careers utilizing their newly acquired skills. Overall, there needs to be stronger alignment between state clean energy policies and programs on the ground.

Possible strategies here could include establishing mandates and requirements on public agencies and/or increased public financing to private entities to stimulate demand for clean energy goods and services. More specifically, the state can require municipalities to procure specific percentages of electricity from renewable sources and to retrofit specific amount of building stock annually.

Expand definitions of clean energy jobs: Although clean energy jobs are typically envisioned as solar panel installation and other construction jobs, clean energy jobs can also include administrative, sales, marketing, and other ancillary positions. By looking beyond only construction jobs as clean energy jobs, the state can ensure that more people are included in the clean energy economy.

Other examples of clean energy jobs result from investment in green technologies and green transportation, thus offering reliable growth potential. Such clean energy jobs can include the manufacturing of electric vehicles and their components: these jobs offer solid wages with entry

points for career advancement, with well-funded manufacturing training programs. This industry, in particular, offers a synergistic opportunity: well-paying manufacturing jobs in and for disadvantaged and low-income communities, alongside reduced emissions in low-income communities due to increase of electric vehicles. Collaborating with the California Air Resources Board (CARB) on these efforts would be key to reduce duplication.

Additionally, there are many clean energy jobs that are designed to make existing processes and technologies cleaner. These positions may not fit into some definitions of clean energy jobs (e.g. the work is not in renewables or energy efficiency, but instead is a position to make an industrial process more efficient and sustainable). There might be an opportunity to provide a tailored training course to prepare these employees to work in more traditional clean energy jobs.

We also acknowledge that the term "clean energy jobs" itself can be problematic and has been partly responsible for some of the challenges identified in this report. The state should therefore consider addressing occupations by industry to (a) demonstrate how existing jobs can incorporate a clean energy focus, and to (b) align these jobs with existing workforce data collected by the State.

III. Examples of Effective WE&T Programs:

Listed below are four local WE&T programs identified by participants during this workshop.[4] This list is certainly incomplete, but offers models for our recommended strategies in practice across California.

- **Asian Neighborhood Design:** San Francisco's Asian Neighborhood Design trains at-risk, low-income youth and young adults in the green construction field. The Employment Training Center provides graduates with training in construction and carpentry; basic education on topics like history and math; high school equivalency or GED preparation; and life skills (money management, conflict resolution, communications, etc.). 90% of their graduates are people of color.[5]
- **CityBuild Academy**: A program of the San Francisco Office of Economic and Workforce Development, CityBuild offers a 12-week pre-apprenticeship program in construction, including green construction and solar installation. CityBuild enables San Francisco residents to rebuild their own communities and specifically connects HOPE SF residents to entry-level jobs in the construction trades and other skilled trades.[6] The program also offers vocational ESL, in addition to recruiting, training, and placement services to job seekers.[7]
- **Proteus:** Based in the Central Valley, Proteus provides education, job training, job placement, youth services, and other support services to farm working families. Proteus trainings span the energy efficiency and renewable energy industries, from specific trainings on photovoltaic solar design and installation to coursework in ESL, citizenship

[4] More organizations that offer trainings will be listed in the 'Job Placement' section, which follows.
[5] Asian Neighborhood Design, "Employment Training Center," *available at* http://www.andnet.org/etc/
[6] HOPE SF communities include: Hunters View, Potrero Terrace & Annex, Westside Courts, Alice Griffith, and Sunnydale.
[7] HOPE SF Initiative, "CityBuild Academy," *available at* http://hope-sf.org/citybuild.php

preparation, and adult basic education. Proteus established the William M. Maguy School of Education (WMSE), which offers additional vocational training.[8]

- **San Mateo County Union Community Alliance:** SMC Union Community Alliance offers workforce development trainings in the San Mateo area. Their Trades Introduction Program (TIP) is a pre-apprenticeship program designed to prepare graduates for careers in the construction trades, including ironwork, sheet metal, carpentry, etc. This free course connects students with green building trades and an apprenticeship of interest; disadvantaged youth, minorities, women, and veterans are particularly encouraged to apply.[9]

[8] Proteus, "Courses and History," *available at* http://www.proteusinc.org/index.php/courses and http://www.proteusinc.org/index.php/history

[9]San Mateo County Union Community Alliance, "Workforce Development," *available at* http://smcuca.org/category/our-work/workforce-development/

JOB PLACEMENT RECOMMENDATIONS

I. Introduction: The Need for Effective Job Placement Programs in California

This section explores the need for higher job placement rates for disadvantaged and low-income workforce and the lack of job pipelines to create opportunities for higher paying and more sustainable jobs.

In authoring these recommendations, we recognize the wide breadth of issues specifically facing each industry. Therefore, we recognize that an industry-by-industry investigation of appropriate and effective strategies to improve job placement rates for disadvantaged and low-income communities offers more value than a generalization across industries. Each industry will know best the key players, effective models, strong local unions, and labor trends. Given this, we have specifically named industries where possible in this section.

II. Recommended Strategies to Job Placement Policies

In order to improve job placement rates for members of disadvantaged and low-income communities, and also improve and ensure high quality job placement programs, the state should consider these bold and actionable strategies:

Create programs that include effective WE&T and job placement in its structure: Building off the previous section on strategies to improve and strengthen workforce education and training (WE&T) programs, we need to ensure that existing resources targeted at disadvantaged and low-income communities adequately and successfully prepare people for long-term employment. Such measures can include a variety of strategies (please see previous section on WE&T programs for more strategies):

- Offer specific skill level certifications
- Provide classes in languages other than English, or connect people to Vocational English as a Second Language (VESL) courses
- Train for a set of skills, rather than training for a specific job
- Connect contracting jobs with PLAs and targeted hiring, to promote continuous employment over project-based employment

Invest in existing training and job placement programs: Part of the effort to improve job placement programs in and for disadvantaged and low-income communities includes identification of successful and effective programs models. There are several models and programs that exist throughout the state (see a list of examples below). We found that the more successful job placement programs are ones that have incorporated job placement with workforce education and training in the program's overall design. However, program success is limited by the funding that they receive. It is critical that the state provides support to expand and ensure the success of these existing programs in order to help them achieve their goals.

Create career pipelines for disadvantaged and low-income workforce: Clean energy career pipelines enhance the state's workforce policies by ensuring that disadvantaged and low-income residents can fully participate in and reap the benefits of the state's growing clean energy economy. Many of the recommendations in this document can be integrated to create programs that have the ability to engage with and provide opportunities for community members at various stages of their lives and careers. Generally, career pipelines incorporate elements that are necessary to support an individual to access information, education and training, and actual employment in a particular field. Some of these elements include outreach to current and potential job-seekers, skills-building classes, on-going training and certification programs, and job placement.

Effective career pipeline models exist in unionized and non-unionized spaces. Many unionized trades offer comprehensive pre-apprenticeship programs that provide both hard and soft skills to trainees, as they train for well-paying, family-sustaining jobs; upon graduation, effective programs offer job placement in the industry as part of their model. These career pipeline components exist outside unionized spaces as well. However, these disparate elements do not always connect well to one another, outside a formalized pipeline model.

Especially with mandatory local hire and specific targets for enrollment of marginalized demographics, pipelines could connect a disadvantaged and low-income workforce with strong skills-trainings, soft skills support, and eventual job placements in energy efficiency programs and retrofit projects located in disadvantaged and low-income communities. Together, these efforts can decrease environmental impact, increase energy efficiency, and offer well-paying sustainable jobs to these communities.

In addition to retrofitting low-income households, we recommend including nonresidential construction in commercial, industrial, and public facilities that impact the local community and may contribute to environmental justice concerns. In particular, municipal, school, and hospital (MUSH) sector efficiency retrofit projects in low-income communities preserve local jobs and grow local job pipelines. MUSH sector efficiency offers mid-range cost energy savings with important co-benefits, since reduced operating costs can be leveraged into: (1) retained or improved community service, and (2) well-paying jobs when projects have sufficient scale.[10][11] When approaching these projects, however, we recognize the strong difference in factors facing urban areas versus rural areas and therefore recommend tailored approaches based on geographical needs.

Improve targeted outreach to most marginalized demographics: Improving job placement rates in and for disadvantaged and low-income communities requires better targeted outreach to these specific communities. Of particular note include demographics like: non-English speakers, high school-age people, and those living in rural communities.

Unfortunately, outreach in disadvantaged and low-income communities around clean energy jobs has been relatively unsuccessful to date. The state, private industry, organized labor, and interested parties should: (1) invest more resources in targeted outreach; and (2) develop a plan with community input on how to further improve targeted outreach.

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[10] Center on Wisconsin Strategy, "Making M.U.S.H. Energy Efficient: Energy Efficiency in the Governmental and Institutional Sector," (2011), *available at* http://www.cows.org/_data/documents/999.pdf

[11] Don Vial Center on Employment in the Green Economy, Comments on the EPA Clean Energy Incentive Program (CEIP) under Clean Power Plan (CPP), (2015), *available at* http://laborcenter.berkeley.edu/pdf/2015/DVC-Comments-CEIP.pdf

Successful outreach must utilize a gender and racial equity lens and partner with community-based efforts. For instance, as much as possible, we should ensure that African-American community-based organizations (CBOs) are engaged and can help connect African-American communities and workers with clean energy opportunities. This holds true for other underrepresented demographics as well. For instance, for women in the construction industry, Oakland's Tradeswomen, Inc. successfully recruits and retains women in the construction trades.

Actionable outreach strategies to target these marginalized communities can include:

- *Connect young people to alternative training and career pathways:* Young people not pursuing higher education deserve skills that will contribute to well-paying, long-lasting careers. Therefore, we recommend specific outreach to young people in high schools and other parts of the school system to promote alternative training and career pathways. For instance, Brightline Defense partners with community organizations to provide this outreach.
- *Offer secure retirement to the aging workforce:* Demographic changes do not occur in a vacuum, so in some cases preparing an aging workforce for stable retirement can help create job opportunities for disadvantaged and low-income communities. In order to understand the best approaches here, we recommend engaging directly with communities (like Los Angeles), who have significantly large aging workforces to understand their concerns. Shifting the focus from individuals to a community will offer a stronger alignment of scales in understanding the workforce demographics and needs.
- *Partner with local community-based organizations to access rural communities:* Especially outside of dense urban areas, successful job placement efforts need to partner with local CBOs to engage the most marginalized. Blanket state-wide policies can unintentionally increase barriers for rural communities.

Prioritize community-owned and operated renewable energy projects: While much of the focus on renewable energy projects to date hinges upon individual homeowners upgrading and retrofitting their properties, homeownership as a prerequisite to such renewable energy benefits presents a challenge in two main ways: (1) Firstly, homeownership rates in disadvantaged and low-income communities are not as high as in their wealthier counterparts, thereby disproportionately barring them from such renewable energy project benefits like solar. (2) Secondly, the small scale of these homeowner projects does not always present optimal circumstances for upgrades like solar panel location or size.

In contrast, community-owned and operated clean energy projects more likely allow for optimal project siting, decreased energy bills (especially for those paying disproportionately high energy bills), local job opportunities, and increased awareness of and engagement with local energy.[12] To maximize success, communities should have an ownership interest in community solar or other clean energy projects. Successful community clean energy programs designed for high-road implementation must also consider community workforce or Project Labor Agreements (PLAs) with contracting agencies.[13]

[12] US Department of Energy, "A Guide to Community Solar: Utility, Private, and Non-profit Project Development," (2010), *available at* http://www.nrel.gov/docs/fy11osti/49930.pdf
[13] The Partnership for Working Families, "The Construction Careers Handbook," (2013), *available at* http://www.forworkingfamilies.org/resources/publications/construction-careers-handbook

Promote high quality job and wage standards in the clean energy economy: In order to improve long-term job placement rates in and for disadvantaged and low-income communities, ensuring high quality job and wage standards in the clean energy economy is critical. Ultimately, the goal is to ensure that these communities in particular have access to well-paying, long-lasting, family-sustaining, clean energy jobs across California. Therefore, the state must think carefully about its responsibility to model, uphold, and incentivize strategies that address existing barriers for these communities.

Strategies to accomplish this goal can include:

- *Form and promote Project Labor Agreements (PLAs):* These pre-hire collective/ bargaining agreements with one or more labor organizations establish the terms and conditions of employment for a specific construction project. PLAs with local hiring targets, also called community hires or local workforce agreements, involve careful consideration of community investments.[14] PLAs can be particularly challenging on a small-scale. PLAs can also work with the state to: (1) establish targeted or local hire requirements for entry-level positions and (2) reserve spots for high-priority workers like the formerly incarcerated, women, local residents from disadvantaged and low-income communities, et al. In order to assess compliance with PLAs, contractors are typically required to track: number of jobs, number of placements, demographic information of placed workers, and geographic information of placed workers.
- *Uphold high contracting standards:* While the state can only specifically govern public projects, there is a strong opportunity here to signal to private industries regulated by the state the need for higher contracting standards to support worker livelihoods. Overall, the state can ensure that job placements focus where standards exist and encourage job standards in more places, like in retrofitting public and institutional buildings for greater energy efficiency. In order to push for higher standards, however, we must ensure that disadvantaged and low-income communities are truly offered accessible, affordable, and individualized resources to meet these contracting standards.
- *Support prevailing wage and apprenticeship standards with public funds:* To date, the clean energy sector by current definitions is comprised of mostly construction jobs, many blue-collar construction and others white-collar construction. As an industry, construction adheres to a set of standards that ensure their jobs remain middle-class. These standards include: prevailing wage and apprenticeship standards like earn-while-you-learn, leave debt-free and with a career, and employment funded by state and industry. Therefore, the apprenticeship pathway into construction provides a secure route into the middle class. Given its less stringent educational requirements, this pipeline is also likely the most accessible.
- *Increase access to apprenticeship programs:* This can be accomplished by establishing partnerships between pre-apprenticeship programs (e.g., the AFL-CIO's Multi-Craft Core Curriculum, or MC3) and educational or training institutions that engage students from disadvantaged or under-represented backgrounds. Partnerships between CBOs and local unions can also be an effective way to ensure that apprenticeship programs, at the

[14]City of Los Angeles Department of Public Works, "Targeted Hiring Guidelines for Contractors: Project Labor Agreement 2015-2020," (2015), *available at* http://bca.lacity.org/site/pdf/hiring/Targeted%20Hiring%20Guidelines%20For%20Contractors.pdf

early stage of publicity and recruitment, engage and pursue job-seekers from disadvantaged or under-represented backgrounds. We also recommend collaboration between CBOs, local unions, and the California Division of Apprenticeship Standards to improve compliance with state and federal Equal Opportunity in Apprenticeship goals.

- *Model clean energy programs after successful construction programs:* Given the successful programs on the construction side, we recommend clean energy programs model themselves after construction programs where possible and appropriate. Part of this involves expanding definitions of clean technology and clean energy (see section below).

Collect better data and use metrics to drive job placement efforts: To improve job placement rates, particularly in and for disadvantaged and low-income communities, we first need reliable, robust, and periodic data collection to improve monitoring and evaluation of current efforts. The state should track specific metrics assessing the inclusivity and diversity of job placement efforts, to establish firm indicators of success. While the Division of Apprenticeship Standards houses some demographic information, no central location provides all the needed data to date.

These metrics are also necessary to attest to the successes of existing apprenticeship models and the relative promise of different industries. For example, with 30% local hire requirement in San Francisco between March 25, 2011 and March 1, 2014, the city reported an overall hiring performance of 42% in response to minimum local hire requirements – exceeding expectations.[15] As another example, while some sectors in the solar industry offer a good starting wage, some of these wages might plateau earlier than expected; given this, we recommend either offering union solar jobs or placing people with energy efficiency jobs with more proven family-sustaining wages and industry stability. To make any of these recommendations, the state must have the requisite data on hand.

Such metrics should include:

- Number of jobs created, by specific sector and industry;
- Percentage of job placements for members of target communities and local residents of disadvantaged and low-income communities;
- Job placement rates by gender, race, and industry;
- Successful job placement rates of the formerly incarcerated;
- Retention rates by employer, industry, and barriers;
- Wage increases over time, by industry and location; and
- Length of employment for successful job placements.

Promote access to clean energy jobs: One barrier to expanding employment opportunities in disadvantaged and low-income communities within the clean energy sector is a lack of employment prospects within these communities. There needs to be a robust assessment of what the clean energy sector labor demands are in these communities to develop a clear understanding of job

[15] The Office of Economic and Workforce Development, "San Francisco Local Hiring Policy for Construction: 2013-2014 Annual Report to the San Francisco Board of Supervisors," (2014), *available at* http://oewd.org/sites/default/files/Documents/local%20hire%20for%20construction%20year%203%20march%2025%202014.pdf

availability and growth within this industry. This is particularly helpful for supporting successful WE&T programs.

Furthermore, as California transitions to a clean energy economy, we must support those currently employed in the fossil fuel industry as they seek employment in new areas. Just transition initiatives and investments should ensure meaningful and realizable benefits to these workers transitioning to the clean energy economy. We must recognize that clean energy jobs relate to a variety of skill levels, industries, and sectors (see section on 'Expand definition of clean energy jobs'). Challenges to promoting the just transition model include: geographic differences, training models, breadth of skills needed, and other practical challenges. A key strategy here is union engagement at both local and state levels, particularly given concerns over some just transition efforts as well as the need for job security.

Create efficiencies in clean energy economy to support job opportunities: In ensuring that disadvantaged and low-income workforce connects with higher-paying and sustainable jobs, we see an opportunity and a need to create efficiencies in the clean energy economy. This assessment requires a comprehensive understanding of the entire clean energy economy, to best identify potential efficiencies.

Two possible strategies to create such efficiencies include:

- *Prioritize retrofitting structures and buildings in clean energy economy:* While significant attention, funding, and resources to date have focused upon the solar industry, we also recommend a prioritization of retrofitting in the clean energy economy. Retrofitting can be useful in increasing energy efficiency, improving environmental impacts, and also employing disadvantaged and low-income communities. By highlighting retrofitting as a key strategy here, we hope to reassert the critical role of upgrading existing structures in addition to new construction as we transition to a clean energy economy.
- *Break down siloed approach to projects and programs:* Siloed approaches to projects and programs can overlook untapped but promising synergies that avoid duplication of efforts. For instance, the closing of a refinery (and consequent loss of refinery jobs) feeds directly into brownfields clean-up efforts (and therefore immediate source of new jobs in the green economy). Similarly, key issues like energy, renewables, and water should consider an alternative to conventional siloed approaches to projects: we therefore recommend "deep green retrofits," which build a holistic plan rather than piecemeal changes and consequently best maximize environmental improvement, job creation, and opportunities for underserved communities. By scaling up projects like community solar, we can benefit from economies of scale and reduce costs. In addition, a departure from strictly siloed funding streams would offer further flexibility in envisioning synergistic projects and programs. For example, CSD weatherization is trying to revamp their entire contracting process, but their GGRF funding is highly restrictive. So while funds exist, current restrictions present a barrier.

Expand definition of clean energy jobs: Although clean energy jobs are typically imagined as construction or installation work, these jobs can also (and should also) include administrative, sales, marketing, and other ancillary positions. This way the clean energy sector could successfully encompass the range of positions currently housed in nonprofits and small businesses. Skills like customer service and office experience could also be marketable skills here, especially in utilities

and energy services. Expanding the definition of clean energy jobs invites more people into the clean energy economy and develops a robust sector.

III. Examples of Effective Job Placement Programs

The following section lists examples of local or statewide community programs that stakeholders have identified during the workshop. This list is incomplete, but it should provide ideas to the CEC on what types of programs are currently working in our communities.

- **Bayview Hunters Point Mobilization for Adolescent Growth in our Communities (BMAGIC):** Cofounded by the Public Defender's Office and Bayview Hunters Point community-based organizations, BMAGIC serves as a collaborative organization supporting community-based organizations in the Bayview Hunters Point community. BMAGIC compiles a free, comprehensive, online directory of resources, including dozens of organizations involved with job placement or job training. This directory notes organizational mission, hours, languages spoken, target demographics, point person, and programs offered. Programs offer: job readiness, job placement, barrier removal, retention services, on-the-job trainings, paid internships, and case management.[16]
- **CityBuild Academy**: (Please refer to 'Examples of Effective WE&T programs' section above)
- **Cypress Mandela:** In partnership with IBEW in Oakland and the Bay Area, this Oakland-based training center offers a 16-week construction pre-apprenticeship program focused on disadvantaged workers. Cypress Mandela does targeted outreach through high schools, churches, job fairs, and community organizations to recruit low-income Oakland adults.[17] Curriculum includes applied math to plumbing fundamentals, solar installation to life skills (budgeting, chemical dependency, team building, etc.). The program includes training, skills assessment and testing, and job placement: in the past two years, over 85% of graduates were placed in jobs. Based on conversations with those familiar with this program, enrollees have thus far had high success rates in becoming journeymen. The training uses a national pre-apprenticeship curriculum and prepares for the IBEW apprenticeship program. IBEW provides a local hire component, direct interview process for veterans, and partnerships with community colleges. No background checks are required for the IBEW apprenticeship, but they are working on in-language trainings.[18]
- **GRID Alternatives:** GRID provides education and training opportunities for local volunteers, many of whom are from disadvantaged and low-income communities. GRID offers specific initiatives to include women, young people, and veterans in the solar industry. In addition to its training program, GRID also launched its Sub-Contractor Partnership Program which requires the sub-contracting solar installer partners to hire eligible job trainees to receive hands-on training and paid employment while working alongside experienced solar installers.[19]

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[16] BMAGIC, "Master Directory," *available at* http://bayviewmagic.org/filter/employment/
[17] BlueGreen Alliance, "Apollo Alliance Project and Cypress Mandela," *available at* http://www.bluegreenalliance.org/apollo/signature-stories/oakland-green-jobs-corps-graduates-first-class
[18] Cypress Mandela Training Center, *available at* http://www.cypressmandela.org/
[19] GRID Alternatives, "Sub-Contractor Partnership Program," *available at* http://www.gridalternatives.org/learn/sash/sub-contractor-partnership-program.

- **Los Angeles Department of Water and Power (LADWP), IBEW Local 18 Utility Pre-Craft Training Program (PCTP):** This partnership program offers an 18-month earn-while-you-learn training that feeds into public utility careers. Rotations for trainees include sessions like: pipefitting, electrical wiring, and retrofitting school and residential buildings. Trainees earn $16/hour and are eligible for health care and other union benefits. IBEW commits to advocating for trainees who have previous convictions to access full-time positions at the LADWP. To date, the RePower LA Coalition (which IBEW and local organizations SCOPE and Los Angeles Alliance for a New Economy convene) has helped place over 200 people within the last several years. Unfortunately, trainee positions are at will and the LADWP hiring process is slow and long following a large hiring freeze at the City of Los Angeles. Additionally, long waitlists of residents who want to join the program make scaleability to meet the needs of job seekers difficult. To date, the trainee program has been in English only; consequently, the RePower LA coalition connects waitlistees to community college ESL classes and other support programs while these residents wait to enter into the program.[20] [21]
- **PG&E's PowerPathway:** In collaboration with local colleges, the public workforce development system, and unions, PG&E's PowerPathway offers trainings in underserved communities for entry-level positions. These programs train both new and experienced workers along skilled craft and apprenticeship paths in gas and electric operations. PG&E offers a variety of apprenticeship programs for future welders, lineworkers, welders, and electrical workers. More than 80% of PowerPathway graduates have been placed with PG&E or others in the utility industry.[22] [23]
- **Rising Sun Energy Center:** Berkeley-based Rising Sun offers green training, employment, and residential efficiency skills and provides a job placement program that works well with employers. Rising Sun's Green Energy Training Services (GETS) Job training program focuses on careers in construction, energy efficiency, and the solar industry combined with case management and job placement support. California Youth Energy Services (CYES) trains and employs young adults in energy efficiency and water conservation upgrades to homes in their communities. To date, 78% of graduates have been placed into jobs. Rising Sun's success working with unions with higher restrictions, like sheet metal, should be seen as a key example. [24]
- ***Projects funded through Proposition 39 provide additional examples of successful job placement programs.[25] Because these programs are relatively new, additional research is needed to identify all successful job placement strategies.***

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[20] LADWP & IBEW 18, "Pre-Craft Training Program," *available at* http://www.energyandutilityconference.org/2A_Coia_Jitahidi.pdf

[21] LADWP & IBEW 18, "Pre-Craft Training Program," (2014), *available at* http://www.ibewlocal18.org/wp/wp-content/uploads/2014/02/JTI-Training-and-History-Report.pdf

[22] PG&E, PowerPathway *available at* http://careers.pge.com/career-training-development/powerpathway-highlights

[23] PG&E, PowerPathway *available at* https://www.pge.com/en_US/residential/in-your-community/your-community/your-division/kern/power-pathway-program.page?

[24] Rising Sun Energy Center, "Programs," *available at* http://risingsunenergy.org/programs/

[25] California's Citizens Oversight Board, "Annual Report: Proposition 39 Clean Energy Jobs Act Report to the Legislature," (2016), available at

http://www.energy.ca.gov/efficiency/proposition39/citizens_oversight_board/documents/2016-04-04_Citizen_Oversight_Board_California_Clean_Energy_Jobs_Act_2015_Report.pdf

SMALL AND DIVERSE-OWNED BUSINESS OPPORTUNITIES

I. Introduction: Creating Small and Diverse-Owned Business Opportunities within the Clean Energy Economy

Small and diverse-owned businesses[26] are critical for California's transition to a clean energy economy. Understanding the barriers to small business contracts and clean energy investments helps to ensure that California creates an equitable clean energy sector that is accessible to disadvantaged and low-income communities.

Between the CEC, CPUC, and CARB, the state provides billions of dollars each year to support the growth of clean and sustainable energy. This creates an incredible opportunity to support an inclusive clean energy economy.

Unfortunately, clean energy contracting opportunities at the state and local levels can often be inaccessible to small and diverse-owned businesses. Applying for these contract opportunities requires: (1) specific knowledge of available funds and funding criteria, (2) extra time and resources, and (3) technical expertise to complete dense and technical applications.

II. Recommended Strategies to Create Small and Diverse-Owned Business Opportunities within the Clean Energy Economy

In order to increase access to these opportunities for small businesses in disadvantaged and low-income communities, the state should consider the following bold and actionable strategies:

Increase technical assistance available to small and diverse-owned businesses: Many small and diverse-owned businesses might not understand the technical language of grant applications or may not speak or read English fluently. To assist these businesses, the state should offer dedicated technical assistance support and - available case managers to navigate and apply for funding opportunities, build important business and networking skills, connect small businesses to contracting opportunities, and avoid contracting risks. Additionally, the state should reevaluate solicitation requirements and eliminate requirements that might be overly burdensome for less-resourced applicants.

Resources for technical assistance are particularly important in the research and development space where small and diverse-owned businesses have less engagement experience. A recent CEC grant (CalSEED) will bring small grants to early stage developers of clean energy and sustainable innovations with a focus on equity and disadvantaged communities. This type of intentional targeting to reach less-resourced communities is critical and should be viewed as a successful model in the development of public and private investment plans.

Finally, there is an opportunity for public and private entities to support and partner with organizations that are successfully connecting small and diverse-owned businesses with contracting opportunities. Below is a list of some of the entities doing this work effectively:

1. Sustainable Business Network (Philadelphia, Pennsylvania)
2. Sierra Business Council

[26] Diverse-owned businesses are defined under AB 864 (Alejo, 2015) and target women, minority, disabled veteran, and LGBT business enterprises.

3. Governor's Office of Business and Economic Development
4. Advanced Energy Economy
5. The Grant Farm
6. California Clean Energy Fund (CalCEF)

Improve transparency of data to support clean energy outreach and accountability: Increasing access to clean energy business opportunities will require greater transparency of those opportunities in earlier stages (e.g. during the development of investment plans). This information should be accessible and targeted to small and diverse-owned businesses in disadvantaged and low-income communities. Furthermore, there should be more transparency around how much state clean energy funding is going to small businesses in disadvantaged and low-income communities, with a particular focus on businesses with less than 20 employees.

Remove policy barriers to targeting contracting opportunities with small and diverse-owned businesses: There are many requirements for state contracting, some of which can be overly burdensome for small businesses. When contracting for a construction project, for example, a business has to both demonstrate its financial ability to complete the project, as well as show a performance bond in case a prime or sub-contractor fails to meet deadlines. Both of these requirements are very expensive and consequently exclude many small businesses. The state should therefore pursue a policy fix or a financing mechanism that can help alleviate some of this burden that currently disproportionately affects small businesses.

Additionally, the ability to target underrepresented businesses is often restricted by Proposition 209, which restricts the state's ability to advance opportunities for women- and minority-owned businesses. Reversing Proposition 209 would help the state more effectively target women- and minority-owned businesses that have historically been left out of clean energy business opportunities.

Prevent fraud: Even where contracting and procurement requirements directed at increasing opportunities of small and diverse-owned businesses exist,[27] many small business owners find fraud to be a common occurrence. For example, primary contractors may list a diverse-owned business in its application in order to meet a procurement requirement and win a contract, only to later cancel the contract with the diverse-owned business and use a different business already in its network. Building in an effective compliance strategy from the beginning can help mitigate against such fraud.

Increase and improve outreach to small and diverse-owned businesses: There is currently a lack of effective outreach to small businesses, particularly in disadvantaged and low-income communities, for clean energy contracting and sub-contracting opportunities. Traditional outreach methods are insufficient and often exclusionary, particularly of disadvantaged and low-income communities. The state and private groups can improve outreach by partnering with local community-based organizations and nonprofits such as chambers, economic development agencies, and other organizations supporting small business interests. In addition to building partnerships, effective outreach strategies should include the following:

> (1) Translate target outreach and education into key languages; (2) Partner with local community organizations; (3) Work with ethnic media; (4) Hire from within the community; (5)

[27] CEC is required to give preference points to diverse business enterprises (DBE). The state is required to have 3% DBE.

Present contracting and business opportunities that are clear and accessible with next steps, a follow-up contact (e.g. case manager), and financing opportunities; (6) Understand and address specific community needs in communication.

Access to outreach initiatives is an important barrier. Due to their size, limited resources, and small staffs, small businesses often cannot participate in convenings or networking events designed to connect them with prime contractors. Unless these events are nearby, accessible, and very likely to lead to a business opportunity, small businesses typically cannot attend. Therefore, the state should pursue more networking opportunities that are either accessible remotely, or targeted and located closer to small businesses. Examples of successful outreach strategies include:

1. Web-based networking opportunities, like the California Energy Commission's EPIC program through LinkedIn;
2. Taped webinars which provide flexibility for busy business owners to access information at a convenient time and in a convenient location;
3. Pre-bid conferences that offer an additional opportunity to connect contractors with grant and contract opportunities and can also connect primary contractors with subcontractors. Pre-bid conference should have a remote option and should occur within disadvantaged and low-income communities when possible;
4. Targeted and regional solicitations, coupled with in-person outreach events in the targeted communities, as sometimes done by the California Energy Commission.

Outreach initiatives should focus on both new and more established businesses.

Provide targeted, consistent, and sufficient incentives to small businesses: There should be clearly defined, consistent, streamlined, and accessible sources of funding for small businesses in disadvantaged and low-income communities, particularly diverse-owned businesses. Although incentives for diverse-owned businesses currently exist, the incentive levels are inconsistent, poorly communicated, and insufficient.

There is a lack of interest in providing private financing in disadvantaged and low-income communities. To address this problem, entities such as CalCEF and DBL Investors provide examples of how investing in small businesses and underserved communities can be a profitable strategy. California can help to increase private capital investment by using public dollars and policies to encourage clean energy investments in target communities.

Of the existing programs directing money to small businesses, many may lack sufficient funding and administrative capacity. Currently, the state and the federal government only offer (a) contracts in small bites, or (b) bundled projects for cost savings from economies of scale. However, these larger "bundled" projects do not generally lower project cost, and furthermore, make it harder for small businesses to submit a bid and compete against larger, more resourced companies.

To help reach a diverse set of communities, the key is to have programs that target and address community needs and priorities (e.g. job growth, deferred maintenance, safety, mobility options) with funding at sufficient levels that are not fragmented.

Develop targeted and equitable solicitations: Solicitations or requests for proposals/information should give applicants with experience working in disadvantaged communities additional credit or

points in an application process for that work. Solicitations and requests for proposals/information should also require that applicants partner and subcontract with diverse-owned businesses and community-based organizations that work in disadvantaged and low-income communities. Additionally, there should be targeted hiring requirements to support clean energy job access within disadvantaged and low-income communities.

To support some of these efforts, there is an employment social enterprise reporting requirement that exists under California's Target Area Contract Preference Act (TACPA). It is unclear if this tool is actually used. At a minimum, there is an opportunity to use the TACPA to encourage more transparency and reporting on targeted procurement.

Finally, grants and solicitations should also expand the scope of work eligible for funding so that a more diverse group of small businesses can qualify for funding. State agencies can explore these opportunities by seeking input from a broader group of stakeholders at earlier stages of the contracting process – e.g. when developing investment plans for state funding opportunities.

Direct research, development, and deployment (RD&D) opportunities to small and diverse-owned businesses: California is at the cutting edge of clean energy RD&D and the CEC is leading the way through its Electric Program Investment Charge (EPIC). The CEC should work closely with community-based groups to build regional networks of small business hubs and incubators that can promote access to clean energy opportunities and foster innovation, particularly in disadvantaged and low-income communities. CarbonBLU and GO Biz Innovation Hubs provide great models and resources for this type of initiative.

Finally, the state should conduct outreach to diverse and underrepresented graduate students about research and development opportunities as well as entrepreneurship opportunities.

Support diversity throughout the procurement pipeline: The clean energy supply chain must reflect the diversity of California's economy and population. There are billions of dollars in contract opportunities for businesses that can provide ancillary support for clean energy investments – from paper clips to legal services. The state or private businesses can require that a minimum amount is spent on contracts with diverse-owned business. This promotes more transparency, accountability, and targeted outreach. The state can also offer stronger incentives and preference points for contracting with diverse-owned businesses that operate in disadvantaged communities and low-income communities. This also helps to promote a more inclusive clean energy economy. The CPUC has had great success through its GO 156 supplier diversity program and should be looked to as a model for this work. See section on "Preventing fraud" for additional relevant information.

Use targeted metrics of success transparently: It is important that the state track metrics to measure whether efforts to create more inclusive and diverse business opportunities are effective, particularly for small businesses in disadvantaged and low-income communities. The Greenlining Institute uses a supplier diversity report card that tracks various metrics of success for increasing diversity under the CPUC's GO 156 program. That report provides examples for metrics and reporting strategies. Below are some additional recommended metrics for consideration:

1. Increased percent of diverse-owned businesses that are receiving contracts
2. Sufficient flexibility in state programs to allow for diversity of people participating
3. Regularly updated and comprehensive list of diverse-owned businesses, particularly those operating in low-income and disadvantaged communities, is available and accessible

Target small businesses for green investment opportunities: In addition to targeting small businesses in disadvantaged and low-income communities in order to provide goods and services within the clean energy procurement pipeline, there is also an opportunity to target these entities for clean energy technology use. Churches, schools, law firms, accounting firms, community centers, restaurants, small businesses, and other community-serving organizations are promising spaces to roll out clean energy and clean transportation technologies. Unfortunately, there is a huge gap in targeting these opportunities to small businesses.

Many of the barriers and opportunities for expanding clean energy technologies in these communities are covered in other sections of the barriers study. One of the biggest issues is lack of capital to help small businesses transition to clean energy use. There is less capital available for small businesses and community serving buildings in disadvantaged and low-income communities. This is magnified with other socioeconomic issues and deferred maintenance.

The Green Tariff Shared Renewables Program, a new community solar program currently being developed at the CPUC, can help address this gap by providing an opportunity for small businesses who might not otherwise have the resources or space to invest in solar energy to get a credit for green energy developed somewhere else. This community solar policy has a carve-out for community solar built in disadvantaged communities. Cities and counties need to step up to ensure that the carve-out is realized and that they get contracts in their communities.

California needs more policies, such as targeted community solar programs, that support clean energy technology funding and access for small businesses, specifically businesses with under 20 employees. There needs to be an accessible and well-defined way for these businesses to self-identify and qualify for targeted incentives. Overall, the state needs to help increase access to both public and private capital for small businesses. The state should accelerate opportunities for financing clean energy businesses opportunities and develop pathways for leveraging private funding. Clean energy funding should also be broad enough to allow funding for deferred maintenance costs necessary for clean energy upgrades.

In addition, the CEC should also seek out small businesses and community buildings for clean energy demonstration and deployment projects through EPIC and Alternative and Renewable Fuel and Vehicle Technology Program funding. This is a great opportunity to promote the use of cutting edge technologies in under-resourced communities that have been historically burdened by pollution from our energy and transportation systems.