



**DATE:** January 9, 2017

**TO:** Strategic Growth Council  
ATTN: Mackenzie Wieser  
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Sacramento, CA 95814

*Filed electronically at: [tccpubliccomments@sgc.ca.gov](mailto:tccpubliccomments@sgc.ca.gov)*

**FROM:** Center for Sustainable Energy® (CSE)

**RE:** CSE's Response to the Draft Scoping Guidelines for the Transformative Climate Communities Program

Dear Ms. Wieser:

The Center for Sustainable Energy® (CSE) is pleased to provide these comments in response to the *Draft Scoping Guidelines for the Transformative Climate Communities (TCC) Program*.

CSE supports the Strategic Growth Council's (SGC) TCC Program and attests to the importance of energy planning and installing clean energy technologies in disadvantaged communities (DACs). Such investments reduce carbon emissions, as well as meet the additional TCC Program goals of increased economic vitality; cleaner air and improved public health outcomes; decreased consumption of water, energy, and other natural resources; and more efficient infrastructure and municipal services.

CSE provides the following comments in regard to: I) Eligibility; II) Primary Objectives; III) Performance Criteria;<sup>1</sup> and IV) Technical Assistance and Support, presented in the Draft Scoping Guidelines.

## **I) Eligibility**

As drafted, the eligibility guidelines will encourage joint applications and multi-sector partnerships.<sup>2</sup> CSE supports this vision for multi-disciplinary, inclusive applications, which will lead to project team diversity. CSE provides the following recommendation to strengthen program eligibility:

**a). Leverage Additional Existing Market Development Partners.** As an infrastructure-focused program, the TCC Program should also seek to leverage existing market development partners,

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<sup>1</sup> There are 14 Performance Criteria under consideration: Greenhouse Gas Reduction; Equitable Development; Community Engagement and Leadership Development; Educational and Economic Opportunities; Access and Mobility; Anti-Displacement Strategies; Criteria Air Pollutant Reduction; Land Preservation and Restoration; Decarbonized Energy and Energy Efficiency; Urban Greening and Green Infrastructure; Efficient Water Usage; Materials Management; Health and Well-Being; Climate Resiliency. CSE comments on four of these categories.

<sup>2</sup> Transformative Climate Communities Draft Scoping Guidelines, Page 4.

including but not limited to Clean Cities Coalitions, university extension services, Advanced Transportation Centers, University Transportation Centers (UTCs), and other infrastructure focused programs ideal to support program research and development. Such a tactic would strengthen project diversity and build on existing resources and best practices.

## II) Primary Objectives

### Planning

CSE appreciates that the scoping guidelines discuss the use of past and current plans,<sup>3</sup> community-driven planning processes,<sup>4</sup> and adopted local land use plans.<sup>5</sup> To encourage intergovernmental resource sharing, promote cross-collaboration, and minimize duplication, the TCC Program should encourage applicants to make use of the following additional resources:

**a). Leverage Climate Action Plans, Greenhouse Gas (GHG) Reduction Plans, Sustainability Plans, and Smart City Challenge Proposals.** Existing plans can inform the design of the TCC Program. The Office of Planning and Research indicates that over 200 California cities have climate action plans, 88 have GHG reductions plans, and 63 have sustainability plans — many of which can provide a foundation for TCC projects.<sup>6</sup> In addition, 11 California cities<sup>7</sup> participated in the creation of innovative proposals through the U.S. Department of Transportation's Smart City Challenge. These proposals touch on emerging transportation and infrastructure policies and visions that can inform TCC Program design. Specifically, the Smart City Challenge finalists' proposals identified more than 150 industry and nonprofit partners pledging more than \$500 million in resources, technology solutions, and technical support to implement smart city initiatives.<sup>8</sup>

**b). Leverage Plug-in Electric Vehicle (PEV) readiness plans and their outputs.** TCC Program investments can support the accelerated deployment of PEV infrastructure by encouraging applications to make use of existing PEV readiness plans. A recent Idaho National Lab study demonstrates the value of such planning, indicating an 87% increase in utilization of PEV charging in 'planned' vs 'non-planned' areas.<sup>9</sup> The TCC applicants could also leverage the output from this planning (e.g., PEV readiness committees, streamlined PEV codes and standards, streamlined PEV permitting practices), which are key indicators of PEV readiness. There are a

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<sup>3</sup> Transformative Climate Communities Draft Scoping Guidelines, Page 6.

<sup>4</sup> Transformative Climate Communities Draft Scoping Guidelines, Page 6.

<sup>5</sup> Transformative Climate Communities Draft Scoping Guidelines, Page 8.

<sup>6</sup> The Governor's Office of Planning and Research has prepared a list of plans and initiatives adopted by California Jurisdictions to address greenhouse gas (GHG) emissions. These plans typically involve setting GHG emission reduction goals and adopting implementation measures to achieve those goals. Website Access: [http://www.opr.ca.gov/docs/California\\_Jurisdictions\\_Addressing\\_Climate\\_Change\\_PDF.pdf](http://www.opr.ca.gov/docs/California_Jurisdictions_Addressing_Climate_Change_PDF.pdf)

<sup>7</sup> Smart City Challenge Proposals were submitted by the following California Cities: San Francisco, Chula Vista, Fremont, Fresno, Long Beach, Moreno Valley, Oakland, Oceanside, Riverside, Sacramento, and San Jose.

<sup>8</sup> US-DOT; Smart City Challenge: Lessons for Building Cities of the Future; Website Access:

<https://www.transportation.gov/sites/dot.gov/files/docs/Smart%20City%20Challenge%20Lessons%20Learned.pdf>

<sup>9</sup> How Does Utilization of Non-Residential EVSE Compare Between those Installed in Oregon in Planned versus Unplanned Locations?; April 2015; Website Access:

<https://avt.inl.gov/sites/default/files/pdf/EVProj/UtilizationOfNonResEVSEInstallationVsPlan.pdf>

wide range of functional and existing resources—such as the PEV readiness plans—which should be tapped to support the deployment of PEV infrastructure in the TCC Program.

## Data

CSE appreciates that the draft scoping guidelines will evaluate impacts using shared data with State and community partners,<sup>10</sup> that partnerships must ensure the ability to collect data and analyze outcomes over time,<sup>11</sup> and that data will be collected for five years.<sup>12</sup> CSE confirms the value of robust data collection to evaluate and improve program design and recommends the following to augment TCC Program data collection practices:

**a) Develop a robust data collection plan.** CSE recommends the creation of a data collection methodology to ensure uniform reporting across project territories, which will maximize learning from TCC Program investments. Data should be made publicly available, easily shared and accessible, and distributed as openly and widely as possible (while ensuring confidentiality and privacy where needed). Public-facing information provides key feedback on program success, informs policy decision-making processes, and is the basis for program evaluation and research, market characterization and strategic decision-making. Robust, transparent data collection methodologies and sources will inevitably strengthen the TCC Program over the long-term.

With these goals in mind, the TCC Program should require:

- **Uniform Data.** Data requirements should be consistent and apply across all selected TCC projects. Uniformity supports data collection efficiencies, ensures the program metrics and evaluations are comparable, and promotes quality assurance and control of the data. As such, CSE strongly encourages that the final Program Guidelines clarify which data sources it plans to hold consistent across all TCC programs.
- **Data with a defined purpose.** The TCC Program will provide the opportunity for pilots and experiments in a select market segment to accumulate experience that can inform the scale and design of future projects and targets. As such, collection of program data must enable researchers to assess the effectiveness of TCC's programs, individually and collectively, across a broad set of metrics. Data collection should be oriented to address specific questions, such as cost-effectiveness, diffusion rates, low-income participation, technology/system performance, and durability.
- **Streamlined Data Reporting.** Data reporting requirements should be based on program requirements and should be easy for programs to track. These efforts in turn reduce administrative costs and support the collection of good data. Furthermore, CSE encourages the SGC to draw upon existing statewide data access and reporting requirements. For example, per Assembly Bill 802 (Williams, 2014), all existing buildings meeting specified thresholds (i.e., 3+ accounts for commercial, 5+ accounts for residential) have access to whole-building energy usage information as of January 1, 2017. TCC Program applicants

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<sup>10</sup> Transformative Climate Communities Draft Scoping Guidelines, Page 5.

<sup>11</sup> Transformative Climate Communities Draft Scoping Guidelines, Page 4.

<sup>12</sup> Transformative Climate Communities Draft Scoping Guidelines, Page 9.

should be required to request this data and benchmark using EPA's ENERGY STAR® Portfolio Manager tool both before and after project upgrades for any existing buildings undergoing a retrofit using TCC funds. Benchmarking and measuring improved building performance aligns with the state's forthcoming benchmarking requirement for buildings over 50,000 square feet as well as U.S. Housing and Urban Development Department guidelines.

- **Granular Data.** Community-scale data should be reported in the lowest census designation necessary to anonymize data. Reporting data in census designations makes it easier for researchers to associate program data with public data sources and aligns the data with the CalEnviroScreen Tool. Using such a threshold balances the need for data privacy while reducing loss of information needed by researchers. In addition to community-level data, more granular project-level and building-level data (as discussed in the previous section) will support SGC's goal to replicate and scale successful TCC projects and initiatives.
- **Categorical Data.** Data reporting requirements should support measurement not only of basic program information, such as the number of households participating in a program, but also of other priorities, such as GHG reductions and access to financial and health benefits of sustainable energy programs. Data standards should also enable improved market segmentation analyses.

Such data would complement the California Energy Commission's SB 350 Barriers Report, which discusses optimal data collection practices for state programs in support of DACs.<sup>13</sup> Proactively establishing data collection methodologies with these traits will set the stage for accelerated, sustainable program replication and expansion.

### III) Performance Criteria

#### 1) Greenhouse Gas (GHG) Reduction Performance Criteria

CSE strongly supports the use of a GHG emissions inventory as an appropriate baseline for the TCC Program and appreciates that the draft presents GHG reductions as the first Performance Criteria. GHG emissions reductions are fundamentally consistent with state AB/SB 32 policy and function as California Air Resources Board's (CARB's) primary environmental measurement values. CSE provides the following recommendation regarding additional baselines:

**a) Include specific pollution burden/exposure indicator<sup>14</sup> baselines.** To maintain consistency between SGC and Office of Environmental Health Hazard Assessment (OEHHA) pollution burden policy, CSE recommends that—in addition to GHG—the SGC should specify the use of CalEnviroScreen's pollution burden/exposure indicator baselines that have air quality and criteria air pollutant touchpoints. This would be consistent with and support California's

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<sup>13</sup> Commission Final Report for the SB 350 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; Adopted by the Energy Commission at the December 14, 2016 Business Meeting. Page 62. Website Access: [http://docketpublic.energy.ca.gov/PublicDocuments/16-OIR-02/TN214830\\_20161215T184655\\_SB\\_350\\_LowIncome\\_Barriers\\_Study\\_Part\\_A\\_\\_Commission\\_Final\\_Report.pdf](http://docketpublic.energy.ca.gov/PublicDocuments/16-OIR-02/TN214830_20161215T184655_SB_350_LowIncome_Barriers_Study_Part_A__Commission_Final_Report.pdf)

<sup>14</sup> Pollution burden/exposure indicators with touchpoints on air quality include ozone, PM 2.5, diesel particulate matter (PM); pesticide use; toxic releases from facilities; and traffic density; Website Access: <http://oehha.ca.gov/calenviroscreen/pollution-indicators>

ambient air quality standards, and complement policy embodied in both the state's *Mobile Source Strategy*<sup>15</sup> and *Short Lived Climate Pollutant Strategy*.<sup>16</sup> In addition, SGC should also consider nitrogen oxide (NOx) emissions reductions baselines, as it is recognized that reductions in NOx from heavy-duty trucks, locomotives, and ocean going vessels will provide the bulk of the smog-forming NOx reductions needed to meet air quality standards by 2031.<sup>17</sup> While CSE views the inclusion of these measures as consistent with 'other ARB-developed approaches' as outlined in the TCC Program draft,<sup>18</sup> explicit identification of these baselines is warranted.

## 2) Educational and Economic Opportunities Performance Criteria

CSE appreciates the proposed community engagement and leadership development performance criteria; however, it is highly likely that the TCC Program's DACs will require an increased Education and Outreach (E&O) effort. Engaging in broad-based, consumer-focused E&O for all TCC residents enables efforts to target specific sub-populations, allows for responsive and streamlined messaging, and supports the aggregation of key data to improve project design. Using this information, stakeholders can create usable, accessible, and compelling material to inform the decision-making process on the TCC Program investments. CSE provides the following recommendations to strengthen E&O Performance Criteria:<sup>19</sup>

**a) Prioritize E&O activities that accelerate clean energy adoption.** The TCC Program should deploy E&O activities that directly drive program participation and accelerate clean energy technology adoption. CSE provides this recommendation based on its experiences administering these crucial E&O activities for a wide variety of statewide clean energy programs:

**i. Zero-Emission Vehicle (ZEV) E&O.** CSE's experience with E&O for the Clean Vehicle Rebate Project (CVRP) indicates a range of benefits from direct and indirect engagement with consumers. These benefits include, but are not limited to: consistent messaging; streamlining of event processes and practices; economies of scale; minimized redundancy; uniform data gathering; and consistency in evaluating project success and opportunities for improvement. These and other efficiencies will be crucial with the TCC Program's focus on DACs and Low-and-Moderate Income (LMI) households.

CVRP's ride-and-drive campaigns have also proven to be an effective, on-the-ground tactic to promoting ZEV adoption in targeted communities. The Experience Electric campaign (managed by CSE for the Metropolitan Transportation Commission and other stakeholders)<sup>20</sup> was a \$1 million campaign that provided more than 6,500 people access to PEVs during ride-and-drive events across various San Francisco Bay Area locations.

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<sup>15</sup> Mobile Source Strategy, May 2016; Website Access:

<https://www.arb.ca.gov/planning/sip/2016sip/2016mobsrsrc.pdf>

<sup>16</sup> Proposed Short-Lived Climate Pollutant Reduction Strategy, April 2016; States the SLCP Strategy "Of the 12 indicators of pollution included in (the CalEnviroScreen) methodology, three are directly related to SLCP emissions (fine particle emissions, diesel particulate emissions, and solid waste sites and facilities), and at least six others (mostly related to water quality and air quality) are at least related to sources of SLCP emissions. Website Access: <https://www.arb.ca.gov/cc/shortlived/meetings/04112016/proposedstrategy.pdf>

<sup>17</sup> Mobile Source Strategy, Page 7.

<sup>18</sup> Transformative Climate Communities Draft Scoping Guidelines, Page 5.

<sup>19</sup> Regarding economic opportunities, E&O campaigns can be done in a way that also creates local jobs. For this response section, CSE will only discuss E&O and not the associated economic opportunities.

<sup>20</sup> MTC Experience Electric Campaign; Website Access: <http://mtc.ca.gov/tags/experience-electric>

The campaign provided program administrators and dealers direct interaction with the customer base and opportunities to share information, promote greater ZEV adoption, and better understand customer motivations to improve future messaging.

For example, 28% of the respondents to the CVRP's EV Consumer Survey stated that ride-and-drive events were a "very" or "extremely" important information source influencing their decision to purchase/lease their vehicle.<sup>21</sup> Moreover, ride-and-drive campaigns have gathered survey data from participants that will inform key stakeholders and future program design.<sup>22</sup>

**ii. Self-Generation Incentive Program E&O.** CSE's experience in providing technical and financial education and assistance related to the Self-Generation Incentive Program (SGIP)<sup>23</sup> further demonstrates the importance of E&O. To accelerate the adoption of SGIP technologies, CSE has produced program statistics dashboards, online tools, reports, and case studies that inform stakeholders about the program and associated technologies. The SGIP Statistics Dashboard is a visualization tool that provides insight into market trends and program impact, facilitating information exchange regarding emerging energy markets.<sup>24</sup> The interactive online Clean Energy Assessment Tool assesses customers' technical potential for SGIP-eligible technologies on commercial sites, based on the property's function, location, and electric and thermal consumption.<sup>25</sup> Once the survey is completed, customers can read about the technologies that have been identified to best fit their energy needs, and may connect with CSE's in-house energy engineer to help facility owners, operators or managers understand the survey results and provide further technical consultation. Lastly, as an additional E&O practice, CSE performs analysis and publishes reports and case studies to further educate and inform customers about SGIP-supported projects.<sup>26</sup> As an example, CSE recently engaged SGIP contractors and local governments to develop a white paper identifying the current barriers and/or inefficiencies that exist in the energy storage permitting process.

**iii. Solar PV E&O.** Through the administration of the California Solar Initiative (CSI), CSE has recognized a continuous need for E&O efforts for consumers, even after the incentives had been exhausted. In response, CSE developed consumer workshops (Solar

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<sup>21</sup> Center for Sustainable Energy (2015). California Air Resources Board Clean Vehicle Rebate Project, EV Consumer Survey Dashboard. Retrieved [June 8,2015] from <http://energycenter.org/clean-vehicle-rebate-project/surveydashboard>.

<sup>22</sup> Experience Electric – The Better Ride Campaign; Website Access: <https://energycenter.org/programs/experienceelectric>

<sup>23</sup> As program administrator of the SGIP in San Diego Gas & Electric's utility service territory, CSE has administered incentives and technical assistance for distributed generation (DG) and energy storage technologies. Since 2001, 70 megawatts (MW) of clean energy capacity for technologies including wind, pressure reduction turbines, internal combustion engines, microturbines, gas turbines, advanced energy storage, fuel cells, and solar photovoltaics have been installed.

<sup>24</sup> SGIP Statistics Dashboard: Website Access: <http://energycenter.org/self-generation-incentive-program/program-statistics>

<sup>25</sup> Clean Energy Assessment Tool: Website Access: <http://energycenter.org/business/clean-energy-assessment>

<sup>26</sup> SGIP Case Studies: Website Access: <http://energycenter.org/self-generation-incentive-program/business/news>

for Homeowners, Solar for Businesses), dedicated solar webpages, and educational collateral. CSE provided call support for both consumers and professionals as well.

In addition, CSE's experience as a partner in the Rooftop Solar Challenge, and the Golden State Solar Impact (GSSI) program has reinforced the need for E&O and other stakeholder engagement. GSSI's focus on cost-reduction strategies has targeted three key areas that have presented barriers: 1) streamlining permitting; 2) facilitating financing; and 3) simplifying interconnection to support expanded solar PV deployment. The E&O support from each of these programs ultimately led to improved solar permitting processes in jurisdictions across California, thereby reducing project approval timelines and increasing adoption of solar PV.

**iv. Energy Upgrade California<sup>27</sup> E&O.** This statewide program educates, motivates, and activates residential and small business customers in all investor-owned utility service territories to take a broad range of energy management actions. Energy Upgrade California helped California ratepayers understand their utility usage, identify seasonal energy savings opportunities, and make action plans to invest in efficient technologies.

**b) Prioritize multi-lingual and culturally-sensitive E&O.** There are no proposed methods to address language and communication barriers in the Draft Guidelines. Recognizing California's multicultural landscape, the TCC Program should plan to facilitate a multi-lingual consumer awareness campaign that targets communities with limited knowledge of air pollution impacts. TCC Program investments should include multi-lingual campaigns that address the impact of air pollution and provides solutions to help clean up each targeted community.

Based on these experiences, CSE strongly encourages the prioritization of E&O activities to accelerate clean energy technology adoption in the communities selected for the TCC Program.

### 3) Access and Mobility Performance Criteria

CSE widely supports activities that can accelerate access and mobility in the TCC program. CSE stands in strong support of increased ZEV penetration in DACs and in LMI households. CSE recommends the following methods to improve the draft access and mobility performance criteria:

#### Promoting ZEV Adoption

**a) Prioritize ZEV public transit.** CSE supports the draft's focus on 'public transit',<sup>28</sup> with a request to specify and prioritize the use of 'Zero Emission Transit'. Zero Emission Transit will have the highest level of positive effect on the communities linked to the TCC program. Zero Emission Transit will induce mode shift, will expose a wide berth of TCC community residents to ZEVs, will maintain high participation rates by providing low barriers to access, and also will provide very high ZEV capacity on a passenger per mile basis. Moreover, Zero Emission Transit presents the opportunity to target criteria air pollutant reductions for both particulate matter (PM) and NOx

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<sup>27</sup> CSE served as the administrator for Energy Upgrade California, the state's energy management brand funded by ratepayers through the Statewide Marketing, Education and Outreach program, through 2016.

<sup>28</sup> Transformative Climate Communities Draft Scoping Guidelines, Page 6.

emissions, which are experienced in very high volume in the state's DACs. These factors justify prioritization of Zero Emission Transit in the TCC program. While Zero Emission Transit is implicit in these performance criteria, CSE recommends that this be clearly and explicitly called out for prioritization.

**b) Set infrastructure targets for publicly-accessible PEV chargers and hydrogen fueling.** CSE appreciates the draft's focus on zero and near-zero emission transportation, as well as the emphasis on multi-modal hubs, district-scale and regional transit, active transportation, and compact development.<sup>29</sup> While the lion's share of PEV charging occurs at home, public charging and workplace charging play a key role in the charging experience, especially in a high public access scenario.<sup>30</sup> To support this charging, CSE strongly recommends that specific per capita targets be set to evaluate charging infrastructure and hydrogen fueling deployment success.<sup>31</sup> These targets should be consistent with targets that are being set by California's policymakers to achieve state ZEV goals.

In addition, CSE recommends PEV charging pilot diversity and encourages SGC to consider testing various public charging models, including DC Fast Charging, as well as residential curbside charging that is accessible to all residents, especially in communities in which on-site opportunities do not exist and cannot be created.<sup>32</sup> Fundamentally, a successful TCC Program will ensure access to an assorted array of clean transportation technology offerings, including charging, across diverse geographies and communities, for all TCC Program residents.

**c) Set ZEV penetration targets to be achieved by 2020 and 2025.** The TCC Program should be evaluated based on its capability to increase ZEV access within the TCC's boundaries, with a clear and concise goal to measure program success based on these two key policy dates.<sup>33</sup> Priority should be given to projects that can forecast and demonstrate the most ZEV acceleration. To measure and manage this trajectory, CSE recommends that the TCC Program should require TCC Program participants to quantify and publish information on anticipated and attained ZEV adoption rates, as well as how they were attained (e.g., light duty vehicle, ZEV car/ride share, ZEV Transit, etc.). For light duty ZEVs, rebate statistics available through CVRP, which provide a proxy of ZEV adoption (at the census tract level), can provide useful data to inform and forecast ZEV targets for the TCC Program.<sup>34</sup> CSE recommends that the CVRP statistics page should be used for this modeling.

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<sup>29</sup> Transformative Climate Communities Draft Scoping Guidelines, Page 6.

<sup>30</sup> From the National Renewable Energy Laboratory California Statewide Plug-In Electric Vehicle Infrastructure Assessment, May 2014. "In a home dominant scenario, NREL projects that 3% of EVs will charge in public, with 12% charging at work, and 85% charging at home. In a high public access scenario, up to 8% of EVs will charge in public, with 22% charging at work, and 70% charging at home." Website Access: <http://www.nrel.gov/docs/fy15osti/60729.pdf>

<sup>31</sup> While it is difficult to forecast "success" for hydrogen fueling, forecasting suggests that California's FCEV population will grow to 13,500 vehicles in 2019 and 43,600 vehicles in 2022, requiring infrastructure accordingly. See: California Energy Commission, Tracking Progress; Zero-Emission Vehicles and Infrastructure; Website Access: [http://www.energy.ca.gov/renewables/tracking\\_progress/documents/electric\\_vehicle.pdf](http://www.energy.ca.gov/renewables/tracking_progress/documents/electric_vehicle.pdf).

<sup>32</sup> As an example, the city of Berkeley has a Residential Curbside Electric Vehicle Charging Pilot that can be used as a potential model. Website Access: <http://www.cityofberkeley.info/evcurbside/>

<sup>33</sup> 2020 and 2025 represent the goals as illustrated in the 2013 ZEV Action Plan.

<sup>34</sup> Center for Sustainable Energy (2016). California Air Resources Board Clean Vehicle Rebate Project, Rebate Statistics. Data last updated December 01, 2016. Retrieved [12/12/2016] from <https://cleanvehiclerebate.org/rebate-statistics>



**d) Prioritize ZEV car-sharing programs in communities that have limited public transportation options and/or no local car-sharing operations.** While TCC funding is earmarked for Fresno and Los Angeles, it is possible that some selected projects will be in rural areas of California. Such a scenario may warrant additional considerations regarding basic access and mobility. Most rural and disadvantaged areas of California face additional challenges with access to basic transportation infrastructure (including public transit) and thus are ideal areas for program investments in ZEV car- and ride-sharing and ZEV public transit pilots. Such programs could also target travel to-and-from-work, travel via carpooling or vanpooling, or support travel to-and-from basic amenities and services ( e.g., grocery store, laundry, hospital, etc.)

**e) Add Reference to encourage innovative pilots, such as Electric Bicycles (E-Bikes).** The TCC Program provides the opportunity to test innovative, community-scale mobility options and vehicle-sharing projects complementary to state policy, including E-Bikes. Notably, testing E-Bikes complements SB 350 Transportation Electrification (TE) provisions targeting support to DACs,<sup>35</sup> fits within the definition of TE per SB 350,<sup>36</sup> and is consistent with CARB's Air Quality Improvement Program 2016-2017 plan, which recognizes E-Bikes as an eligible mobility option component.<sup>37</sup> Fundamentally, supporting E-Bike deployment in the TCC Program presents an opportunity to promote active transportation coupled with TE, to test 'minimum viable product' technologies that can replace fossil fuel miles with electric-miles, and to pilot projects that record E-Bike travel behavior and information (i.e., travel patterns and usage, charging patterns). In addition, E-Bikes have the ability to charge from DG resources, as has been demonstrated by California-based E-Bikes projects.<sup>38</sup> As such, CSE encourages the SGC to add reference to E-bikes as an eligible project type.<sup>39</sup>

### Promoting Incentives

**e) Include Transit Commuter Incentives.** The TCC Program provides an ideal environment to test incentive strategies to encourage program participation. Such strategies could target the "promotion of infill development and reduced vehicle miles traveled" via transit commuter incentives, consistent with SGC *Vibrant Communities and Landscapes Draft*.<sup>40</sup> Through its experience administering CVRP, SGIP, and CSI incentives, CSE can attest to the value of providing

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<sup>35</sup> Per SB 350, Section 740.12 (C) of Public Utility Code States: "[W]idespread transportation electrification requires increased access for disadvantaged communities, low- and moderate-income communities, and other consumers of zero-emission and near-zero-emission vehicles, and increased use of those vehicles in those communities and by other consumers to enhance air quality, lower greenhouse gases emissions, and promote overall benefits to those communities and other consumers.

<sup>36</sup> Per SB 350, Section 237.5 of Public Utilities Code states: "[T]ransportation electrification" means the use of electricity from external sources of electrical power, including the electrical grid, for all or part of vehicles, vessels, trains, boats, or other equipment that are mobile sources of air pollution and greenhouse gases and the related programs and charging and propulsion infrastructure investments to enable and encourage this use of electricity.

<sup>37</sup> Proposed Fiscal Year 2016-17 Funding Plan For Low Carbon Transportation And Fuels Investments And The Air Quality Improvement Program.

<sup>38</sup> Example: Bike Solar Oakland; The Future of Urban Transportation is Powered by the Sun: Website Access: <http://bikesolaroakland.com/>

<sup>39</sup> While CSE does support E-Bike testing in the TCC Program, E-Bikes should not be the sole investment and ideally should be coupled with other car/ride sharing projects that promote mobility.

<sup>40</sup> Vibrant Communities and Landscapes A Vision for California in 2050 (Draft for Comment & Discussion), Website Access: <https://www.arb.ca.gov/cc/scopingplan/meetings/091316/vibrant%20communities.pdf>

consumer incentives to encourage clean technology adoption and promote consumer behavioral change. As such, CSE encourages SGC to assess the use of the transit commuter incentives to encourage TCC Program participation.

### Promoting Agency Cross-Collaboration

**f) Explore and leverage connectivity to California Sustainable Freight Action Plan (CSFAP) pilots:** CSE appreciates that performance criteria encourages projects with passenger and freight intermodal connectivity<sup>41</sup> and the goal to connect with significant public infrastructure investments [such as California high-speed rail (CHSR)].<sup>42</sup> This is consistent with the 'mobility hubs' concept as outlined in California Transportation Plan 2040<sup>43</sup> and the 2015 (draft) and 2016 ZEV Action Plans, which prioritize zero-emission technologies for public transit and freight transport.<sup>44</sup> This strategy also has touchpoints on the CHSR Authority's environmental policy objectives of powering CHSR with 100% renewable energy and as a ZNE system<sup>45</sup> and is consistent with the CHSR Authority's recently-released Sustainability Report.<sup>46</sup>

To strengthen the connectivity between the TCC Program and freight, reference to the CSFAP's pilots should be added. The CSFAP prioritizes three pilot projects: a) Dairy Biogas for Freight Vehicles (San Joaquin Valley); b) advanced truck corridor development (in Southern California); and c) cross border projects (U.S.-Mexico).<sup>47</sup> Of these, both the dairy biogas and advanced truck corridor development have high potential for overlap with the TCC Program investments in San Joaquin Valley and Los Angeles, as well as potential touchpoints on widespread TE consistent with Senate Bill (SB) 350. In addition, dairy biogas for freight vehicles presents opportunities to increase recycling/waste diversion, which could be leveraged in support of the state's short-lived climate pollutants policy, per SB 1383<sup>48</sup> and other Mobile Source Strategy goals around federal and state air quality standards.

It is quite possible that the San Joaquin Valley and Southern California projects may select corridor electrification projects and initiatives (e.g., overhead catenary lines (OCLs) along highly-traveled freight corridors; solar PV development in right-of-ways; and/or Tri-Generation (Tri-Gen) for generating renewable hydrogen for transportation. These would be ideal for connectivity to the TCC Program,<sup>49</sup> as well as other programs such as CHSR. Moreover, there is a

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<sup>41</sup> Transformative Climate Communities Draft Scoping Guidelines, Page 8.

<sup>42</sup> Transformative Climate Communities Draft Scoping Guidelines, Page 8.

<sup>43</sup> California Transportation Plan 2040; Website Access:

<http://www.dot.ca.gov/hq/tpp/californiatransportationplan2040/Final%20CTP/FINALCTP2040-Report-WebReady.pdf>

<sup>44</sup> 2016 ZEV Action Plan; Website Access: [https://www.gov.ca.gov/docs/2016\\_ZEV\\_Action\\_Plan.pdf](https://www.gov.ca.gov/docs/2016_ZEV_Action_Plan.pdf)

<sup>45</sup> California High-Speed Rail Policy Directive: Poli Plan-03, 8/19/2013, Page 7. Website Access:

[http://www.hsr.ca.gov/docs/programs/green\\_practices/sustainability/Sustainability\\_signed\\_policy.pdf](http://www.hsr.ca.gov/docs/programs/green_practices/sustainability/Sustainability_signed_policy.pdf)

<sup>46</sup> California High-Speed Rail Authority's Sustainability Report; December 2016; Website Access:

[http://www.hsr.ca.gov/docs/programs/green\\_practices/sustainability/Sustainability\\_Report\\_Dec\\_2016.pdf](http://www.hsr.ca.gov/docs/programs/green_practices/sustainability/Sustainability_Report_Dec_2016.pdf)

<sup>47</sup> CSFAP; Page 19; Website Access: [http://www.dot.ca.gov/csfap/documents/CSFAP\\_FINAL\\_07272016.pdf](http://www.dot.ca.gov/csfap/documents/CSFAP_FINAL_07272016.pdf)

<sup>48</sup> SB 1383 by Senator Lara, among other things, directs dairy farmers to reduce methane emissions from manure to 40 percent below their 2013 levels by 2030.

<sup>49</sup> CSE's Full Comments on the CSFAP are available at the following address:

[http://www.dot.ca.gov/casustainablefreight/documents/Comments/182\\_CSE.pdf](http://www.dot.ca.gov/casustainablefreight/documents/Comments/182_CSE.pdf)

nexus between renewable bio-gas sourced from farms (as well as wind and solar on farms) that may provide additional cross-project touchpoints. As such, to encourage resource sharing and promote project diversity, the TCC Program should seek opportunities to connect to the CSFAP pilots.

#### 4) Decarbonized Energy and Energy Efficiency Performance Criteria

CSE appreciates that the draft prioritizes energy efficiency strategies and the inclusion of goals to deploy smart-grid technologies and energy storage.<sup>50</sup> CSE recommends the following additions:

**a) Prioritize the use of Low Carbon, High Renewable Energy Electricity.** CSE suggests that the GHG reductions Performance Criteria should encourage the use of very low Carbon Intensity (CI) electricity for all TCC projects. Electricity generation alone creates 20% of California's GHGs.<sup>51</sup> Creating a renewable energy electricity strategy for TCC investments is consistent with California's de-carbonization efforts embodied in SB 350.<sup>52</sup> In addition, high renewable energy-content electricity is consistent with current CARB advice related to the Volkswagen settlement, in which CARB noted the incorporation of renewable energy with ZEV infrastructure as an example 'Green City' investment.<sup>53</sup>

As such, CSE recommends that the TCC Program prioritize the use of Renewable Energy with a baseline CI significantly below the California electricity mix average.<sup>54</sup> CSE recommends that TCC projects should attain this ultra-low CI from a mixture of procured Renewable Energy and DG resources. Renewable Energy procurement should be consistent with the "eligible Renewable Energy resources" definitions of the State's Renewables Portfolio Standard Program,<sup>55</sup> and DG should be interconnected on-site or close to TCC project load, be able to be constructed quickly, present no need for new transmission lines, and should have limited environmental impact. Fundamentally, the integration of electricity with high quantities of renewable energy and DG is required to meet the State's more aggressive, widespread, and long-term goals aimed at deep GHG emissions reductions. The TCC Program provides an ideal opportunity to pursue these goals.

**b) Include a reference to Solar PV.** While the proposed strategies will likely support grid reliability and resilience, a direct reference to solar PV—a major renewable energy resource—is warranted. Solar PV can minimize the need for new energy infrastructure costs, such as transmission and distribution, consistent with the draft scoping guidelines and supports a diverse array of grid reliability and redundancy initiatives. Resources such as solar PV provide energy that is abundant, reliable, sustainable, and, with modern technology and controls,

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<sup>50</sup> Transformative Climate Communities Draft Scoping Guidelines, Page 6.

<sup>51</sup> California Greenhouse Gas Emission Inventory: 2000 – 2014; VERSION June 17, 2016; Website Access: [https://www.arb.ca.gov/cc/inventory/pubs/reports/2000\\_2014/ghg\\_inventory\\_trends\\_00-14\\_20160617.pdf](https://www.arb.ca.gov/cc/inventory/pubs/reports/2000_2014/ghg_inventory_trends_00-14_20160617.pdf)

<sup>52</sup> SB 350 "requires that the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources be increased to 50% by December 31, 2030. Website Access: [https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=201520160SB350](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB350)

<sup>53</sup> Volkswagen California ZEV Investment Commitment Public Input Workshop, December 2, 2016, Slide 27; Website Access: [https://www.arb.ca.gov/msprog/vw\\_info/vsi/vw-zevinvest/meetings/120216\\_present.pdf](https://www.arb.ca.gov/msprog/vw_info/vsi/vw-zevinvest/meetings/120216_present.pdf)

<sup>54</sup> As Reported in Low Carbon Fuel Standard Regulation, Table 6, the average mixture for California Electricity is 105.16 gCO<sub>2</sub> e/(MJ); Website Access: <http://www.arb.ca.gov/regact/2015/lcfs2015/lcfsfinalregorder.pdf>

<sup>55</sup> Renewables Portfolio Standard Eligibility; Eighth Edition; Commission Guidebook; June 2015; Website Access: <http://www.energy.ca.gov/2015publications/CEC-300-2015-001/CEC-300-2015-001-ED8-CMF.pdf>

flexible, and is an ideal power source for TCC projects. Moreover, there are a wide range of solar PV incentives available for the Disadvantaged Communities (DAC) and Low-and-moderate Income (LMI) Households, which will accelerate access to solar PV and can be leveraged to promote solar PV in the TCC Program. As such, CSE suggests direct reference to solar PV as a preferred DG technology in the performance criteria.

**c) Add Reference to Vehicle-To-Grid Integration (VGI).** CSE appreciates the goal to deploy smart-grid technologies.<sup>56</sup> CSE recommends that the TCC Program prioritize PEV charging infrastructure as a component of smart grid design and deployment. Notably, California's policy climate prioritizes the development of smart charging,<sup>57</sup> the use of PEVs as Distributed Energy Resources (DERs),<sup>58</sup> and is exploring the use of PEV charging with VGI capability.<sup>59</sup> This 'grid of the future' will be achieved through integrated charging and load management support capability. As such, to support the evolving grid and later generations of California's PEV infrastructure, CSE recommends that priority be given to the deployment of technology with VGI capabilities, including networking, communication, demand response, and bidirectional charging.

#### IV) Technical Assistance and Support

Due to project complexity and scale, there will be a need for a diverse array of technical assistance offerings in the TCC Program. With this in mind, CSE strongly supports the use of planning grants as depicted in the Draft Guidelines.<sup>60</sup> In addition, CSE provides the following recommendation to accelerate coordination in the TCC Program:

**a) Compile a Database for 'Interested Organizations'.** Given the diversity of stakeholders, the expedient development of guidelines, and the rapid preparation for implementation, much will be gained from actions that promote communication and coordination across stakeholder groups. Specifically, SGC should conduct a Request for Information to compile a list of 'Interested Organizations', similar to that which was created for the US-DOT Smart Cities Challenge Program.<sup>61</sup> This would directly support stakeholder organizations interested in TCC Program participation by encouraging information sharing and dialogue. In addition, such a

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<sup>56</sup> Transformative Climate Communities Draft Scoping Guidelines, Page 6.

<sup>57</sup> 2016 ZEV Action Plan; Website Access: [https://www.gov.ca.gov/docs/2016\\_ZEV\\_Action\\_Plan.pdf](https://www.gov.ca.gov/docs/2016_ZEV_Action_Plan.pdf)

<sup>58</sup> From California's Distributed Energy Resources Action Plan: Aligning Vision and Action Discussion Draft: September 29, 2016: Wholesale DER Market Integration and Interconnection Vision Elements include: "Electric vehicle charging systems, and mobility and driving behaviors, can be predicted and overseen in the grid operations"; Website Access:

[http://www.cpuc.ca.gov/uploadedFiles/CPUC\\_Public\\_Website/Content/About\\_Us/Organization/Commissioners/Michael\\_J.\\_Picker/2016-09-26%20DER%20Action%20Plan%20FINAL3.pdf](http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/About_Us/Organization/Commissioners/Michael_J._Picker/2016-09-26%20DER%20Action%20Plan%20FINAL3.pdf)

<sup>59</sup> 2016 Zero Emission Vehicle Action Plan, Page 28: "Support state- and federally-funded VGI pilots that help commercialize applications that aggregate vehicles as distributed energy resources, enhance communication, and control functionality between vehicle and grid infrastructure, and derive value for vehicles (PEV or FCEV) as flexible load and storage in grid support applications; Website Access:

[https://www.gov.ca.gov/docs/2016\\_ZEV\\_Action\\_Plan.pdf](https://www.gov.ca.gov/docs/2016_ZEV_Action_Plan.pdf)

<sup>60</sup> Transformative Climate Communities Draft Scoping Guidelines, Page 9.

<sup>61</sup> U.S. Department of Transportation's Smart City Challenge; Smart City Challenge: Interested Organizations; Website Access: <https://www.transportation.gov/smartcity/interested-organizations/list>

database would be transferrable and potentially able to support other SGC initiatives, as well as other agency/interagency initiatives.

**b) Create a stakeholder comments archive.** To further promote information sharing and encourage stakeholder communication, SGC should publish stakeholder comments through an online portal that contains a downloadable comments archive. Sister agencies, such as CARB and the California Energy Commission, readily utilize such archives. The creation of this archive will also support both intra-organizational dialogues, as well as promote communication between the TCC Program and SGC.

**c) Conduct Roundtable workshops.** CSE is pleased that SGC plans to hold a *Transformative Climate Communities Stakeholder Summit* in February 2017. Facilitating such face-to-face stakeholder engagements will support collaboration in the TCC Program. CSE recommends that SGC continue to assemble multiple roundtable workshops strategically across the state to facilitate TCC Program collaboration between housing, planning, transit, energy, water, community engagement, and energy stakeholders. To promote cross-cultural activity, these events should be transcribed, recorded and translated into multilingual material. This early cross-fertilization and exchange of ideas will support the development of holistic and diverse program applications.

## Conclusion

CSE appreciates the opportunity provide this response to SGC regarding the TCC Program Draft Scoping Guidelines and looks forward to continuing to provide its perspective on program implementation. The TCC Program presents a unique opportunity to drive much needed resources to targeted DACs and support California's 'Grid of The Future' through the use of:

- *Additional and Existing Market Development Partners;*
- *Climate Action Plans, GHG Reduction Plans, Sustainability Plans, and US-DOT Smart City Challenge Initiatives;*
- *PEV readiness plans;*
- *Robust data collection plans;*
- *Additional Pollution Burden/Exposure Indicator baselines*
- *Multi-lingual and culturally-sensitive E&O activities that accelerate clean energy adoption;*
- *ZEV public transit;*
- *Publicly-accessible PEV chargers and hydrogen fueling;*
- *ZEV penetration consistent with 2020 and 2025 goals;*
- *ZEV car-sharing programs in communities with limited public transportation options and/or no local car-sharing operations;*
- *E-Bikes;*
- *Transit Commuter Incentives;*
- *Projects linked to California Sustainable Freight Action Plan (CSFAP) Investments;*
- *High RE, very low carbon electricity well below state averages;*
- *Solar PV;*
- *Vehicle-To-Grid Integration (VGI);*
- *An 'Interested Organizations' Database;*
- *A stakeholder comments archive; and*

- *Multiple roundtable workshops.*

Please continue to consider CSE a resource on these and other matters, and feel free to reach out to Paul D. Hernandez, CSE's Transportation Electrification Policy Manager, with any questions or for clarifications regarding these comments.

Respectfully Submitted,



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