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| **Description:** | S2. 1B Kersey Manliclic, CARB |
| **Filer:** | Raquel Kravitz |
| **Organization:** | California Air Resources Board |
| **Submitter Role:** | Public Agency |
| **Submission Date:** | 8/18/2020 11:19:57 AM |
| **Docketed Date:** | 8/18/2020 |
Clean Transportation Incentives

Approaches to Assess Funding Program Benefits

Panel Discussion for CEC’s 2020 IEPR Report Update
August 19, 2020
Part of CARB’s Larger Incentive Funding Portfolio

- **Low Carbon Transportation**
  - GHG reductions & priority populations
  - $485M for FY 19-20

- **Air Quality Improvement Program (AQIP)**
  - Criteria pollutant & toxics reductions
  - $48M for FY 19-20

- **VW Mitigation Trust**
  - NOx mitigation & zero-emissions
  - $423M for 2017+

- **Community Air Protection (AB617)**
  - Criteria, toxics, & GHG reductions for community goals
  - $245M for FY 19-20

- **Carl Moyer Program**
  - SIP emission reductions
  - $94M for FY 19-20

- **FARMER**
  - Criteria, toxics, & GHG reductions for ag sector
  - $65M for FY 19-20

- **Prop 1B Goods Movement**
  - PM & NOx reductions in goods movement corridors
  - Already awarded

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**Note:** These funding amounts are from the FY 19-20 Low Carbon Transportation Investments and AQIP Funding Plan released September 2019.
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Assessment Approaches Focus

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- Annual budget appropriation guided by the *priorities* in the Cap and Trade Auction Proceeds Investment Plan
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  - Foster job creation & job training
Need means & metrics for estimating/tracking progress

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CARB
GHG Quantification Methodology

• Emission Factors developed for variety of vehicle classes
  • Fuel economy derived from several sources
  • Fuel economy paired w/Carbon Intensity + Lower Heating Value (LHV)→ WTW GHG emission factors
  • For alternative fuel vehicles, conversion is done by applying energy economy ratio (EER) to baseline fuel type

• Emission Reductions = Baseline – Alternative

• Use Quantification Methodologies to predict and then evaluate results
  • For example, estimate expected emission reductions in Low Carbon Transportation Funding Plan
  • Revisit those estimates once actual vehicles being funded on road is known
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## Criteria Pollutant and Co-Benefit Quantification Methodology

- Emission Factors pulled from EMFAC based on vehicle parameters

- Co-benefits (e.g., fuel savings, cost savings) = $f$(fuel consumption)
  - Methodology leverages key variables for GHG quantification

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<thead>
<tr>
<th>Vehicle category</th>
<th>Model Year</th>
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\[
\text{PM} = \text{PM}_{\text{exhaust}} + \text{PM}_{\text{brake wear}} + \text{PM}_{\text{tire wear}}
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Jobs Co-Benefit

- Methodology developed w/UC Berkeley
  - Conducted comprehensive literature review
  - Identified project types where co-benefit is relevant
- CARB used data from Regional Input-Output Modeling Tool (RIMS II)
  - Non-proprietary; available for public use
  - Jobs supported, not only created
- Multi-faceted approach:
  - Also collect real data on actual direct jobs (e.g., wage, benefits provided, education and training, etc.)

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Model

- Sector #1 (e.g., equipment)
- Sector #2 (e.g., materials)
- Sector #3 (e.g., administrative)
- Funding Amt ($)
- RIMS II industry-specific multipliers
- Direct Jobs (#)
- Indirect Jobs (#)
- Induced Jobs (#)

Methodology available here: https://ww2.arb.ca.gov/resources/documents/cci-methodologies
Assessing Benefits to Priority Populations

- California Climate Investments Funding Guidelines Benefit Criteria Tables
  - Program specific
  - 3-step evaluation
    - Step 1: Location
    - Step 2: Address a community need?
    - Step 3: Project benefits?
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Host community meetings, workshops, outreach efforts, or public meetings to engage local residents and community groups

Receive documentation of support from local community-based organizations and/or residents

Look at factors in CalEnviroScreen 3.0 that are most impacting AB 1550 priority populations

Evaluation Criteria for Providing Benefits To Priority Populations

<table>
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<tr>
<th>Step 2 – Address a Need. Identify an important community or household need and evaluate whether the project provides a benefit that meaningfully addresses that need</th>
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<td>B. Recommended Approach: Receive documentation of support from local community-based organizations and/or residents (e.g., letters, emails) identifying a need that the project addresses and demonstrating that the project has broad community support.</td>
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<td>C. Alternative Approach: Where direct engagement is infeasible, look at the individual factors in CalEnviroScreen that are most impacting an identified disadvantaged or low-income community (i.e., factors that score above the 75th percentile), and confirm that the project will reduce the impacts of at least one of those factors; or</td>
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<td>D. Alternative Approach: Where direct engagement is infeasible, refer to the list of common needs for priority populations in CARB’s Funding Guidelines Table 5 and confirm that the project addresses at least one listed need.</td>
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Describe identified community or household need(s):

If the project addresses a community or household need as described in Step 2, proceed to Step 3. If the project does not address a community or household need, it will not count toward statutory investment minimums and no further evaluation is needed.
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**Evaluation Criteria for Providing Benefits To Priority Populations**

- **CLEAN TRANSPORTATION AND EQUIPMENT**

  **Step 2 – Address a Need.** Identify an important community or household need and evaluate whether the project provides a benefit that meaningfully addresses that need.

  To identify a need that the project will address, agencies and/or applicants can use a variety of approaches:
  - A. **Recommended Approach:** Host community meetings, workshops, outreach efforts, or public meetings as part of the planning process to engage local residents and community groups for input on community or household needs, and document how the received input was considered in the design and/or selection of projects to address those needs.
  - B. **Recommended Approach:** Receive documentation of support from local community-based organizations and/or residents (e.g., letters, emails) identifying a need that the project addresses and demonstrating that the project has broad community support.
  - C. **Alternative Approach:** Where direct engagement is impossible, look at the individual factors in CalEnviroScreen that are most impacting an identified disadvantaged or low-income community (i.e., factors that score above the 75th percentile), and confirm that the project will reduce the impacts of at least one of those factors; or
  - D. **Alternative Approach:** Where direct engagement is impossible, refer to the list of common needs for priority populations in CARB’s Funding Guidelines Table 3 and confirm that the project addresses at least one listed need.

- **Describe identified community or household need(s):**

  If the project addresses a community or household need as described in Step 2, proceed to Step 3. If the project does not address a community or household need, it will not count toward statutory investment minimums and no further evaluation is needed.

 Projects provide broad benefits to these communities (NOx ↓, PM$_{2.5/10}$ ↓, energy & transportation savings ($), mobility access...)

- AB 1550 low-income community/household
- AB 1550 disadvantaged community

- Look at factors in CalEnviroScreen 3.0 that are most impacting AB 1550 priority populations

- Host community meetings, workshops, outreach efforts, or public meetings to engage local residents and community groups

- Receive documentation of support from local community-based organizations and/or residents
Tracking Market Transformation

2010:
135 total vehicles

- Clean Vehicle Rebate Project (CVRP)
  - Track spatial and temporal growth of program impact
  - See areas where more outreach is needed
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Tracking Market Transformation

2010: 135 total vehicles
2014: 88,729 total vehicles
2018: 300,814 total vehicles

• Clean Vehicle Rebate Project (CVRP)
  • Track spatial and temporal growth of program impact
  • See areas where more outreach is needed
Tracking Market Transformation

• Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP)
  • Track spatial and temporal growth of program impact

2010: 635 vehicles total
Tracking Market Transformation

- Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP)
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1) More OEM participation, More vehicle models since incentives began
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3) Anecdotal information that incentives have led to ↑ workforce (e.g., electric UTVs for agriculture)
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2) Visible shift in predominant technology that applicants pursue vouchers for.

3) Anecdotal information that incentives have led to ↑ workforce (e.g., electric UTVs for agriculture).

4) Tracking private investment ($) brought in by incentive programs.
Reporting on Benefits

- Full data transparency & accountability
- Annual Report to the Legislature

California Climate Investments
Data Dashboard:
https://www.caclimateinvestments.ca.gov/cci-data-dashboard
Annual Report:
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Thank You | Questions?

Low Carbon Transportation Investments and Air Quality Improvement Program

Visit us @

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