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<tr>
<td><strong>Docket Number:</strong></td>
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<td><strong>Project Title:</strong></td>
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Clean Miles Standard Workshop

DRAFT REGULATION TARGETS

July 17, 2020
Webinar Participation Guide

• All participants will be muted during the workshop.
• Presenter will call out slide numbers or slide titles – if you experience delays, please be patient until the slide loads, or try re-joining the webinar.
• For the Q&A session following the presentation, please type in your question using the Questions function of GoToWebinar.
• Questions can also be sent to cleancars@arb.ca.gov to be addressed at a later time.
Workshop Topics

- Draft electrification targets
- Draft greenhouse gas targets
- Reporting requirements
  - Fuel consumption table
  - Compliance occupancy
- Flexibilities and exemptions
- Zero-emission passenger mile credits
- Alternative scenarios
Applicable to: Passenger service on transportation network company (TNC) platforms

Key goals:
• Reduce GHG
• Increase electrification
SB 1014 Deadlines

Jan 2020
- CARB establishes base year inventory

Jan 2021
- CARB adopts targets, CPUC implements program

Jan 2022
- TNCs begin submitting 2-year plans

2023
- TNCs begin meeting annual targets
Draft

Electrification Targets (% eVMT)

Fraction of vehicle miles traveled by battery electric vehicles (BEV) and fuel cell electric vehicles (FCEV)
Updated Electrification Target Assumptions

Cost model

- Level 2 Charger Costs
- DCFC & L2 Utilization
- Exempt Drivers
- Fuel Costs
- Vehicle Costs

Electrification Target
## Updated Electrification Target Assumptions

<table>
<thead>
<tr>
<th>Input Values</th>
<th>Updates</th>
</tr>
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<tbody>
<tr>
<td>Vehicle Costs</td>
<td>No amortization to vehicle capital costs (used to be 3yr amortization)</td>
</tr>
<tr>
<td>Fuel Costs</td>
<td>Gasoline price projections to use CEC IEPR estimates</td>
</tr>
<tr>
<td>Level 2 Charger Costs</td>
<td>Level 2 home charger costs amortized over 3 years (from 7 years)</td>
</tr>
<tr>
<td>DCFC &amp; Level 2</td>
<td>DCFC/L2 utilization split assumed to be 50/50 in 2018, 75/25 by 2023, and flat lines at 90/10 by 2026</td>
</tr>
<tr>
<td>Low Mileage Drivers</td>
<td>Drivers with less than 5,000 TNC miles per year assumed not to switch to ZEV</td>
</tr>
</tbody>
</table>
Draft Electrification Targets

- **Strategy 1:** Individual driver breaks even
- **Strategy 2:** Individual driver breaks even but also earns extra*
- **Draft regulation targets with updated inputs**

* $35/week in 2020 → $10/wk in 2030
Characteristics of Vehicles that Switched to ZEVs in the Cost Model

- For the draft electrification target of 60%:
  - A third of 2030 TNC vehicles switched to ZEVs
  - In early years, primarily switching high mileage vehicles
  - Average age of vehicle switched to ZEV varied between 1-3 years

- Achieving a much higher electrification target would require switching a very large number of low mileage and older vehicles
  - Bigger risk as these are lower income drivers
Comments Received from May 15th Workshop

Infrastructure and charging time
COVID-19 uncertainties
Higher/lower electrification targets
Impact on low-income and DAC drivers
Incentives and subsidies
Level 2 home charger costs
Regional targets
Greenhouse Gas Target Metric

\[
\frac{g \ CO_2}{PMT} = \frac{\text{Total VMT}_{\text{Periods 1,2,3}}}{\text{Total VMT}_{\text{Period 3}}} \times \ CO_2 \ \text{per mile} \times \text{Occupancy}
\]
Draft GHG Target Assumptions

**Deadheading**: held constant from BAU

**Fuel consumption**: from electrification targets

\[
\frac{g \ CO_2}{\text{PMT}} = \frac{\text{Total VMT}_{\text{Period 1,2,3}} \times CO_2 \text{ per mile}}{\text{Total VMT}_{\text{Period 3}} \times \text{Occupancy} + \text{Active/Transit PMT}}
\]

**Occupancy**: used compliance values

**Active/Transit PMT**: held constant from BAU (0)

Draft GHG targets were set using electrification and occupancy
Occupancy Assumptions

Due to COVID-19, pooling paused

Target Assumptions:

• Pooling recovers by 2023 to 2018 levels
• Optimistic but feasible pooling increases by 2030

<table>
<thead>
<tr>
<th>Year</th>
<th>Pooling Regions (LA, SD, SF)</th>
<th>Rest of State</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pool Request</td>
<td>Pool Match</td>
</tr>
<tr>
<td>2023</td>
<td>0.35</td>
<td>0.70</td>
</tr>
<tr>
<td>2030</td>
<td>0.50</td>
<td>0.83</td>
</tr>
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</table>
### Draft GHG Annual Targets

<table>
<thead>
<tr>
<th>Compliance Year</th>
<th>g CO₂/PMT</th>
</tr>
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<tbody>
<tr>
<td>2023</td>
<td>255</td>
</tr>
<tr>
<td>2024</td>
<td>240</td>
</tr>
<tr>
<td>2025</td>
<td>222</td>
</tr>
<tr>
<td>2026</td>
<td>193</td>
</tr>
<tr>
<td>2027</td>
<td>168</td>
</tr>
<tr>
<td>2028</td>
<td>140</td>
</tr>
<tr>
<td>2029</td>
<td>116</td>
</tr>
<tr>
<td>2030+</td>
<td>88</td>
</tr>
</tbody>
</table>

![Graph showing CO₂ emissions targets from 2023 to 2030 with a significant decrease towards 2030+]

Almost entirely from eVMT target
Alternative Scenarios for SRIA

% eVMT

- BAU
- Alt 1
- Alt 2
- Targets

100%
60%
40%
3%

2023 2024 2025 2026 2027 2028 2029 2030

g CO₂/PMT

- BAU
- Alt 1
- Alt 2
- Targets

300
g CO₂/PMT
200
150
100
50
0

2023 2024 2025 2026 2027 2028 2029 2030

CARB
Compliance Occupancy Values

- Values to be used for GHG target compliance calculation
- Promote use and availability of pooling
- In place of real occupancy while data collection is developed and refined

<table>
<thead>
<tr>
<th>Ride Type</th>
<th>Compliance Occupancy</th>
</tr>
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<tbody>
<tr>
<td>Non-pooled</td>
<td>1.5</td>
</tr>
<tr>
<td>Pool-requested, unmatched</td>
<td>1.5</td>
</tr>
<tr>
<td>Pool-requested, matched</td>
<td>2.5</td>
</tr>
</tbody>
</table>

\[
g_{\text{CO}_2} = \frac{\text{Total VMT}_{\text{Periods 1,2,3}} \times \text{CO}_2 \text{ per mile}}{\text{Total VMT}_{\text{Period 3}} \times \text{Occupancy}}
\]
### Example: Passenger Car g CO₂/mi

<table>
<thead>
<tr>
<th>MY</th>
<th>Diesel</th>
<th>Gas</th>
<th>HEV</th>
<th>PHEV</th>
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<tr>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>2009</td>
<td>398</td>
<td>363</td>
<td>177</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>305</td>
<td>342</td>
<td>144</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>344</td>
<td>339</td>
<td>148</td>
<td>213</td>
</tr>
<tr>
<td>2012</td>
<td>327</td>
<td>323</td>
<td>153</td>
<td>140</td>
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<td>2013</td>
<td>321</td>
<td>314</td>
<td>153</td>
<td>147</td>
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<tr>
<td>2014</td>
<td>296</td>
<td>308</td>
<td>154</td>
<td>148</td>
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<tr>
<td>2015</td>
<td>274</td>
<td>299</td>
<td>148</td>
<td>157</td>
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<tr>
<td>2016</td>
<td>342</td>
<td>281</td>
<td>151</td>
<td>166</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
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</table>

**Compliance CO₂ Table**

\[
g_{CO_2} = \frac{\text{Total VMT}_{Periods\ 1,2,3}}{\text{Total VMT}_{Period\ 3}} \times \text{CO}_2\ \text{per mile}
\]

\[
PMT = \frac{\text{Total VMT}_{Periods\ 1,2,3}}{\text{Total VMT}_{Period\ 3}} \times \text{Occupancy}
\]
Reporting Requirements

• Two-Year (Biennial) Compliance Plan
  • First plan is due January 1, 2022 for compliance in 2023 and 2024

• Annual Compliance Summary Report
  • Due March 31 of each year following compliance year
  • E.g., annual compliance report for 2023 is due March 31, 2024

• Continued annual data submittals with CPUC templates
Additional Data Required in Annual Compliance

New enforceable fields:

• Vehicle type/technology/fuel
  • PC, LT, hybrid, PHEV, BEV, FCEV, diesel
• Pool-matched (Y/N)
  • In addition to Pool-Requested (Y/N)*
• Vehicle occupancy*

*In current CPUC data submittal template
Small Company Exemptions

TNCs with annual VMT ≤ 5 million

Exempt from:
- GHG and electrification targets
- Two-year (biennial) compliance plan
- Annual compliance summary report

Not exempt from:
- Continued annual data submittal as required by CPUC
Compliance Flexibilities

New entrants & small TNCs:
• After one year of operation with 5 million VMT
• E.g., a TNC that exceeds 5 million VMT in 2026 must submit a compliance plan by 2027 for complying with targets in 2028 and 2029.

All TNCs:
• Option to use 3-year averaging
• Option to carry forward over-compliance credits up to 3 years
Transit & Active Transportation Credits: Key Design Principles

• Increase first/last mile transit connections
• Increase bike, scooter, and walk miles
Lessons Learned: Key Attributes for Transit & Active Transportation Credits

• Strong data reporting
• Verify transit connections (e.g. integrated fares)
• Advance innovative partnerships
• Provide mobility options and EVs
• Promote infrastructure investments
• Foster transportation alternatives (especially important for low income riders)
Potential Zero-Emission PMT Credit Options

1. Credit for miles walked or taken via micromobility (e.g. e-bike and e-scooter) owned and operated by a TNC, connected to a TNC virtual stop.

2. Credit for TNC trips or micromobility owned and operated by TNC connected to transit via the California Integrated Travel Program (CAL-ITP).

3. Credit for TNC investments in bicycle infrastructure.

4. Credit for TNCs that partners with transit agencies under the Innovative Clean Transit regulation.
1. Walk or Micromobility Miles Connected To TNC Virtual Stop

Proposed Quantification Methodology:

\[
\text{Active / Transit PMT} = \text{Total # of Connected Trips}_{W/M} \times \text{Distance Traveled in Connected Trips}_{W/M} \times \text{Multiplier}
\]

- Virtual Stop: Refers to corner to corner service, not door-to-door service. It's where riders request a TNC pick-up then walk or use micromobility to access pick-up location.

- Credit only for TNC owned, operated, and reported bike/scooter miles.
2. TNC/Micromobility Connected Trips to Transit via California Integrated Travel Program (CAL-ITP)

Proposed Quantification Methodology:

\[
\text{Active / Transit PMT} = \frac{\text{Total # of Connected Trips}_{\text{Transit}}}{\text{Miles Traveled in Connected Trips}_{\text{P3 Trips}}} \times \text{Multiplier}
\]

- Credit for P3 portion of TNC trips connected to transit and reported via the CAL-ITP program.
- Credit for TNC owned, operated, and reported bike/scooter miles connected to transit and reported via the CAL-ITP program.
3. TNC Investments in Bicycle Infrastructure

Proposed Quantification Methodology:

\[
\text{GHG Emission credits from bikeway Investment} = \frac{TNC \text{ bikeway Investment}}{\$128 \text{ per ton} \times \text{Project Life}} \times \text{Multiplier} \quad \text{(unit: gram CO2)}
\]

Notes:
1. $128 per ton of CO2 is the average cost effectiveness of bikeway projects based on a FHWA report. Future-year cost-effectiveness is expected to be lower.
2. Default project life will be 10 years
3. Estimated GHG emission credits will be applied to the overall equation of credit calculation shown in slide 13
4. Zero-emission Mobility Partnerships under the Innovative Clean Transit Regulation

Proposed Quantification Methodology:

Active/Transit PMT =

\[ ICT \text{ TNC Partnership Credit as reported by Transit Agencies} \]

Notes:
1. Credit for TNC partnerships with transit agency's under the Innovative Clean Transit (ICT) regulation.
2. ICT requires all public transit agencies to gradually transition to a 100 percent zero-emission buses, but also encourages zero-emission first- and last-mile connectivity for transit riders.
Questions for Stakeholders

• **Value of Credit and Credit Caps:** How much value should these credits have (i.e. what would be reasonable quantification multiplier be)? Should there be a cap on the amount of credits?

• **Reporting:** For each credit the TNCs may need to collect and submit certain activity data to claim the credits. What data could be challenging or easy to collect?

• **Other Credits:** Are there other credit options we should consider?

• **Equity:** Are there more effective ways to promote equity with these credits? For example, higher multipliers for rides that begin or end in a disadvantaged community?

• **Costs:** What are the costs associated with these credit options?

• **Implementation:** How likely are TNCs to use these credit options?
Regulation Timeline

- **August 2020**
  Draft Regulation posted on CMS website

- **August 16, 2020**
  Standardized Regulatory Impact Assessment (SRIA) posted by Dept. of Finance and link on CMS website

- **October 20, 2020**
  Initial Statement of Reasons (ISOR) posted with SRIA

- **December 10, 2020**
  Board Hearing
Requesting Stakeholder Feedback

Please submit comments by July 31, 2020 to cleancars@arb.ca.gov
Q&A

Please submit your questions via the GoToWebinar Questions function