Webinar Participation

• All participants will be muted during the workshop.

• During 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

New Board Hearing date
Draft electrification targets
Draft greenhouse gas targets
Optional credits
Senate Bill 1014

Applicable to:
Passenger service by transportation network companies (TNCs)

Key goals:
• Reduce GHG
• Increase electrification
• Support other transportation modes
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

Board date moved to May 2021
Electric vehicle miles traveled (eVMT)

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

<table>
<thead>
<tr>
<th>Input Values</th>
<th>Updates</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEV Barrier</td>
<td>$50/week in 2020 and decreasing linearly to $0/week in 2030</td>
</tr>
<tr>
<td>Fuel Costs</td>
<td>Gasoline price projections to use updated CEC IEPR estimates</td>
</tr>
<tr>
<td>Level 2 Charger Costs</td>
<td>Level 2 home charger costs amortized over 7 years</td>
</tr>
<tr>
<td>DCFC &amp; Level 2 Utilization</td>
<td>DCFC/L2 utilization split assumed to be 50/50 in all years of the analysis</td>
</tr>
<tr>
<td>Low Mileage Barrier</td>
<td>No longer a barrier since we assume savings on personal and non-TNC miles</td>
</tr>
</tbody>
</table>
Proposed eVMT Targets

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>Target (% eVMT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2023</td>
<td>2%</td>
</tr>
<tr>
<td>2024</td>
<td>4%</td>
</tr>
<tr>
<td>2025</td>
<td>13%</td>
</tr>
<tr>
<td>2026</td>
<td>30%</td>
</tr>
<tr>
<td>2027</td>
<td>50%</td>
</tr>
<tr>
<td>2028</td>
<td>65%</td>
</tr>
<tr>
<td>2029</td>
<td>80%</td>
</tr>
<tr>
<td>2030+</td>
<td>90%</td>
</tr>
</tbody>
</table>
Characteristics of vehicles that switched to ZEVs in the cost model

- 43% of 2030 TNC vehicles are switched to ZEVs
- In early years, primarily high mileage vehicles are switched
- Average age of vehicle switched to ZEV varied between 1-3 years

<table>
<thead>
<tr>
<th>Year</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
<th>2026</th>
<th>2027</th>
<th>2028</th>
<th>2029</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Vehicles Switched</td>
<td>466</td>
<td>3,378</td>
<td>22,114</td>
<td>72,101</td>
<td>139,659</td>
<td>201,516</td>
<td>273,281</td>
<td>333,173</td>
</tr>
<tr>
<td>Avg. age vehicles switched</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Greenhouse Gas Target

\[
\frac{g \text{ CO}_2}{\text{Passenger mile traveled}} = \frac{VMT_{\text{Periods 1,2,3}}}{VMT_{\text{Period 3}}} \times \frac{\text{CO}_2 \text{ per mile}}{\text{Occupancy}}
\]
Proposed GHG Targets

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>Target (g CO₂/PMT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2023</td>
<td>252</td>
</tr>
<tr>
<td>2024</td>
<td>237</td>
</tr>
<tr>
<td>2025</td>
<td>207</td>
</tr>
<tr>
<td>2026</td>
<td>161</td>
</tr>
<tr>
<td>2027</td>
<td>110</td>
</tr>
<tr>
<td>2028</td>
<td>69</td>
</tr>
<tr>
<td>2029</td>
<td>30</td>
</tr>
<tr>
<td>2030+</td>
<td>0</td>
</tr>
</tbody>
</table>
GHG gap between the targets

2023 2024 2025 2026 2027 2028 2029 2030

g CO2/PMT
Compliance options to fill the gap

- Electrification
- Deadhead Mile Reduction
- Increased Shared Rides
- Optional Credits*

*Credits cannot be banked
Optional Credits*

1. Invest in bikeways and sidewalks
2. Connect passengers to mass transit
3. Reduce driver costs

*Credits cannot be banked
Optional Credit 1

Investment in bikeway/sidewalk projects

To qualify:

- Project is in an existing, approved plan of local jurisdiction
- Information submittal
- Credits can be applied for each year* of the length of project life
Investment in bikeway/sidewalk projects

\[ CO_2 \text{ credit} = \frac{Dollars \text{ invested} (\$) \times 907,185}{\$128 \times \text{Project Life}} \]

$128$ is a cost-effectiveness value (in dollars per ton of CO$_2$) for bikeway and sidewalk infrastructure, derived from cost-effectiveness values for PM2.5, CO and NOx from the FHWA and emission rates from the EMFAC2017 model.

*Project life* is the number of years the project will be operational as provided by the CEQA lead agency of the project.
Optional Credit 2

Connect passengers to mass transit

To qualify:

- Integrated fare payment system
- Data submittal
- Use P3 distance of first- or last-mile connected trip, whichever is greater

\[ CO_2 \text{ credit} = VMT_{T,P3} \times CO_2 \text{ factor} \]
Optional Credit 3

Staff seeking input on multiple concepts to reduce driver costs

<table>
<thead>
<tr>
<th>GHG credits for dollars invested in ZEVs</th>
<th>GHG credits for electricity used by drivers</th>
<th>GHG credits for L2 home charger</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subsidize purchase or financing of ZEV. This could also be used to subsidize ZEV short term rentals</td>
<td>CO2 credit for ZEV drivers, based on proof of free electricity from TNCs given to drivers</td>
<td>Subsidize purchase and installation of level 2 home chargers</td>
</tr>
</tbody>
</table>
Applying Optional Credit

\[
g \frac{CO_2}{PMT} = \frac{\sum(VMT_{p_1,p_2,p_3} \times CO_2 \text{ factor}) - CO_2 \text{ credits}}{\sum(VMT_{p_3} \times \text{ occupancy})}
\]
Regulation Timeline

November 2020
Draft regulation posted on CMS website

March 2021
Initial Statement of Reasons to be released

May 2021
Regulation proposal at Board Hearing
Requesting Stakeholder Feedback

Please submit comments by December 11, 2020 to cleancars@arb.ca.gov
Q&A

Please submit your questions via the GoToWebinar Questions function