Air Quality Challenges

- Over 12 million Californians breathe unhealthy air
- Key challenges
  - South Coast ozone
  - San Joaquin Valley particulate matter (PM 2.5)
- Heavy-duty trucks emit one third of statewide NOx

2019 Calendar Year
Statewide NOx Emissions
Upcoming CARB efforts - A focus on Zero and Low-Emission

Zero-Emission (ZE) Operation
- Innovative Clean Transit
- ZE Airport Shuttle
- ZE truck certification
- Advanced Clean Trucks
- Rail yard idling
- ZE ships at berth
- ZE TRUs
- ZE forklifts
- ZE cargo equipment

Lower Emissions
- 2018
  - CA GHG Phase 2
  - Truck OBD
  - Truck Smoke Tests
- 2019
  - Handbook-1 Warehouses
- 2020
  - Heavy-duty Omnibus
  - Heavy-duty I/M
  - Harbor craft
- 2021
  - Handbook-2 Ports, Rail
  - Low-emission diesel fuel
- 2022
  - Non-preempted locomotives
## Heavy-duty Electric Market Growing

<table>
<thead>
<tr>
<th>Class</th>
<th>Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2B-3</td>
<td>8,501 - 14,000</td>
</tr>
<tr>
<td>4-5</td>
<td>14,001 - 19,500</td>
</tr>
<tr>
<td>6-7</td>
<td>19,501 - 33,000</td>
</tr>
<tr>
<td>8</td>
<td>33,001 and over</td>
</tr>
</tbody>
</table>

### Commercial Vehicles Today

- [Image of various commercial vehicles]

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