Ecology Staff

- Eman Jabali – Meeting host
- Tina Maurer – Meeting host
- Martha Hankins – Policy/Planning Section Manager
- Elena Guilfoil – Rulemaking Lead
- Dustin Watson – Technical Lead
Agenda

• Welcome
• Overview
• ZEV credit options
• Low NOx Omnibus Rule
• Fleet reporting requirement
• Adoption of federal rules
• Next steps
Overview

Rulemaking will update two rules:

- Clean Vehicles Program – Chapter 173-423 WAC
- General Regulations for Air Pollution Sources – Chapter 173-400 WAC

Statutory authority

- Motor Vehicle Emission Standards (Chapter 70A.30 RCW)
  - Low emission vehicle program since 2008
  - 2020 law changed: Directs Ecology to adopt California vehicle emission standards
  - 2021: Adopted zero emission vehicle program (will start in 2024) and updated the low emission vehicle requirements

- Washington Clean Air Act (Chapter 70A.15 RCW)
  - Provides Ecology authority to adopt emission standards and regulate air quality in Washington
Legal Authority –
Clean Vehicles Program

Clean Air Act Section 177

• Allows California to adopt unique motor vehicle emission standards

• States must:
  • Adopt California motor vehicle emission standards identically
  • Provide two years’ advance notice before the start of the model year
What This Rulemaking Will Do

• Adopt California motor vehicle emission standards:
  • Advanced Clean Cars II (ACC II)
  • Heavy-Duty Low NOx Omnibus Rule
  • Requirements would start with model year 2026 vehicles

• Evaluate and potentially adopt:
  • Washington-specific ZEV credit system
  • One-time medium- and heavy-duty fleet reporting requirement

• Adopt federal rules by reference in Chapter 173-400 WAC
### 2022 Rulemaking Timeline

**Announce Rulemaking**
- January 18

**Develop Rule**
- February 28
- April 19
- May 24

**Propose Rule**

**Evaluate Comments and Respond**

**Adopt Rule**
- September – December
- December 2022
Comment Online

- Informal public comment period ends May 29, 2022
- Comment online:  
  https://aq.ecology.commentinput.com/?id=UZmpG
- Rulemaking web page  
  (search for ZEV or ZEV rulemaking)  
ZEV Credit Options Paper

- ZEV Credit Options paper posted on rulemaking web page
  - Full list of acronyms
  - All charts and tables used in this presentation
  - Provides further detail and discussion
- What are zero emission vehicle (ZEV) credits?
Considering ZEV Credit Options

• Washington adopted zero emission vehicles (ZEV) rule in November 2021 – Advanced Clean Cars I (ACC I)

• Rule did not establish credit banks or early action credits

• California’s proposed Advanced Clean Cars II (ACC II) would change how automakers earn ZEV credits
  • ACC I: 1 ZEV = 0.5 to 4 credits
  • ACC II: 1 ZEV = 1 credit

• ACC II ZEV stringency increases rapidly to 100% ZEV in 2035
CARB ACC II Draft ZEV Stringency

CARB Draft ZEV Stringency*

All pre-2026 ZEV credits expire in 2031

Automakers expected to use ACC I credits to ease compliance for MY 26-30
ZEV Credit Options – Policy Goals

• Provide credits in Washington to level the reliance on banked credits for compliance between model years (MY) 2026 and 2030
• Provide an incentive for ZEV delivery to Washington before model year (MY) 2025
• Support automakers that have invested in ZEV technology
• Prevent rewarding an automaker at the expense of another
• Maximize the number of ZEVs deployed in Washington
• Maximize reductions in greenhouse gas emissions and criteria pollutants — nitrogen oxides (NOx) and fine particulate matter (PM$_{2.5}$)
ZEV Credit Options
Overview of Evaluation

- We reviewed:
  - Credits offered by other recent ZEV states
  - Washington’s ZEV market share compared to those states
  - Current ZEV sales trends and market share in Washington
  - Projections and forecasts of future ZEV sales nationally
  - Projected future ZEV sales and market share in Washington
  - Projected credit availability in Washington from ZEV sales for MY 2025 – MY 2030

- We then evaluated five options for credit offerings to meet policy goals.
Credits Offered by Other Recent ZEV States

- States recently adopting ACC I
  - Colorado (2019)
  - Washington (2020)
  - Minnesota (2021)
  - Nevada (2021)
  - Virginia (2021)

<table>
<thead>
<tr>
<th>State</th>
<th>Proportional Credits</th>
<th>Early Action Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Colorado – Option 1</strong></td>
<td>Yes – Full Usage Limited to 36%</td>
<td>No</td>
</tr>
<tr>
<td><strong>Colorado – Option 2</strong></td>
<td>Yes – Full Usage Limited to 23%</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Washington</strong></td>
<td>None</td>
<td>No</td>
</tr>
<tr>
<td><strong>Minnesota</strong></td>
<td>Yes – Full</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Nevada</strong></td>
<td>Yes – Full</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Virginia</strong></td>
<td>Yes – Full</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Washington’s ZEV Market Share Compared to Other Recent ZEV States

<table>
<thead>
<tr>
<th>State</th>
<th>MY 2020 ZEV Market Share (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>7.9</td>
</tr>
<tr>
<td>Colorado</td>
<td>3.8</td>
</tr>
<tr>
<td>Minnesota</td>
<td>1.6</td>
</tr>
<tr>
<td>Nevada</td>
<td>2.9</td>
</tr>
<tr>
<td>Virginia</td>
<td>2.0</td>
</tr>
<tr>
<td>Washington</td>
<td>5.1</td>
</tr>
<tr>
<td>Nationally</td>
<td>2.2</td>
</tr>
</tbody>
</table>

Source: Atlas EV Hub Automaker Dashboard
# Current ZEV Sales Trends and Market Share in Washington

Washington is consistently ranked #2 (after California) for ZEV market share

<table>
<thead>
<tr>
<th>State</th>
<th>Q3 2021 (%)</th>
<th>Q4 2021 (%)</th>
<th>Full Year 2021 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>13.9</td>
<td>16.7</td>
<td>12.6</td>
</tr>
<tr>
<td>Colorado</td>
<td>7.0</td>
<td>7.6</td>
<td>6.0</td>
</tr>
<tr>
<td>Minnesota</td>
<td>3.3</td>
<td>3.4</td>
<td>2.9</td>
</tr>
<tr>
<td>Nevada</td>
<td>6.6</td>
<td>9.8</td>
<td>5.6</td>
</tr>
<tr>
<td>Virginia</td>
<td>4.4</td>
<td>5.2</td>
<td>3.8</td>
</tr>
<tr>
<td>Washington</td>
<td>8.6</td>
<td>11.1</td>
<td>7.7</td>
</tr>
<tr>
<td>Nationally</td>
<td>5.0</td>
<td>3.6</td>
<td>3.9</td>
</tr>
</tbody>
</table>

Source: Atlas EV Hub Automaker Dashboard
Global EV sales more than doubled in 2021 vs. 2020, tripled vs. 2019.

2022 is promising to be a big year for electric vehicles.

Ford plans to boost production capacity of electric F-150 Lightning to 150,000 per year; ability to produce 600K BEVs annually within 24 months.

GM plans six-fold increase in 2022 electric truck, SUV production - sources.

GM plans six-fold increase in 2022 electric truck, SUV production - sources.

Ford Plans To Add 5 New Electric Lincoln SUVs By 2026.

The future of Lincoln is all-electric, and out of this world!

U.S. Energy Dept to provide about $3 bln to boost production of advanced batteries.
Projections and Forecasts of Future ZEV Sales Nationally

- Automakers investing billions of dollars in electric powertrains
- Dozens of new EV models coming soon
Projections and Forecasts of Future ZEV Sales Nationally

- Most national EV market forecasts released pre-pandemic
- Dramatic increase in interest and acceptance of EVs during pandemic
- Many new models intended for mass production
  - Ford F-150 Lightning production volumes quadrupled
  - Ford Mustang Mach-E production increased
  - GM intends to produce 1 million EVs per year by 2025
- Numerous automakers announcing all-EV lineups by 2025–2040
- Biden Administration announced goal of 50% ZEV by 2030
  - Several automakers commit to 40%–50% ZEVs by 2030
Projected Future ZEV Sales and Market Share in Washington
Projected Credit Availability in Washington From ZEV Sales for MY 2025 – MY 2030

- Automakers expected to earn 128,000 ZEV credits in 2025
  - ACC I credits become “historical” credits in 2026
- Under ACC II starting in 2026, automakers expected to have annual deficits through 2030

<table>
<thead>
<tr>
<th>Model Year</th>
<th>All New Light Duty Sales</th>
<th>% EVs</th>
<th>New Light Duty EV Sales</th>
<th>Credits Earned</th>
<th>ZEV Mandate (%)</th>
<th>Credits Needed</th>
<th>Yearly Over/Under Compliance</th>
<th>Running Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2025</td>
<td>289,406</td>
<td>20.7</td>
<td>59,907</td>
<td>191,702</td>
<td>22.0</td>
<td>63,669</td>
<td>128,003</td>
<td>128,033</td>
</tr>
<tr>
<td>2026</td>
<td>303,877</td>
<td>25.8</td>
<td>78,400</td>
<td>78,400</td>
<td>35.0</td>
<td>106,357</td>
<td>-27,957</td>
<td>100,077</td>
</tr>
<tr>
<td>2027</td>
<td>319,070</td>
<td>32.3</td>
<td>103,060</td>
<td>103,060</td>
<td>43.0</td>
<td>137,200</td>
<td>-34,141</td>
<td>65,936</td>
</tr>
<tr>
<td>2028</td>
<td>335,024</td>
<td>40.4</td>
<td>135,350</td>
<td>135,350</td>
<td>51.0</td>
<td>170,862</td>
<td>-35,513</td>
<td>30,424</td>
</tr>
<tr>
<td>2029</td>
<td>351,775</td>
<td>50.5</td>
<td>177,646</td>
<td>177,646</td>
<td>59.0</td>
<td>207,547</td>
<td>-29,901</td>
<td>523</td>
</tr>
<tr>
<td>2030</td>
<td>369,364</td>
<td>63.1</td>
<td>233,069</td>
<td>233,069</td>
<td>68.0</td>
<td>251,168</td>
<td>-18,099</td>
<td>-17,576</td>
</tr>
</tbody>
</table>
ZEV Credit Options - Introduction

- Option 1 – Full proportional credits
  Washington credits proportional to banked California credits

- Option 2 – Adjusted proportional credits
  Washington credits proportional to banked California credits, adjusted for robust Washington sales

- Option 3 – No additional ACC I credits

- Option 4 – Early action credits
  Credits for MY 2023 and MY 2024

- Option 5 – Combination option
  Mix of proportional credits and early action credits
  - Option 5a: Option 4 and Option 1
  - Option 5b: Option 4 and Option 2
  - Option 5c: Option 4 and Option 3
ZEV Credit Options – Option 1
Full Proportional Credits

• Option 1 would provide automakers the number of credits proportionate to their credits in California’s credit bank.

• California credit bank has about 1.88 million credits.

• Washington’s auto sales are 15.1% of those in California
  • Washington sales = 295,582
  • California sales = 1,959,243

• Total credits under Option 1 = 283,530.56

• Breakdown of credit allocations by automaker in Table 7 of ZEV Credit Options paper (page 20)
ZEV Credit Options – Option 2

Adjusted Proportional Credits

- Washington’s ZEV sales stronger than other recent states that offered full proportional credits
  - Average 2021 ZEV market share = 4.1%
    - Minnesota 2021 ZEV market share = 2.9%
    - Nevada 2021 ZEV market share = 5.6%
    - Virginia 2021 ZEV market share = 3.8%
    - Washington 2021 ZEV market share = 7.7%
- Option 2 would adjust proportional credits down by 0.53
- Total credits under Option 2 = 150,271.19
- Breakdown of credit allocations by automaker in Table 8 of ZEV Credit Options discussion paper (page 22)
ZEV Credit Options – Option 3
No Additional ACC I Credits

• Option 3 would adopt ACC II as written and not provide any additional credits under ACC I.

• Automakers would still bank credits from ZEV sales for MY2025 under ACC I.

• CARB is proposing numerous compliance flexibilities in ACC II
  • Environmental justice credits
  • Pooling or transfer of credits between ZEV states
  • Early compliance credits for ZEV sales above standard for MY 2024 and MY 2025

• Proposed flexibilities increase likelihood of automaker compliance with ACC II
ZEV Credit Options – Option 4
Early Action Credits Only

• Option 4 would provide early action credits for ZEV sales for MY 2023 and MY 2024.

• Would increase likelihood of ZEV model availability in WA

• Projected ZEV sales of about 77,500 for MY 2023 and 2024

• Automakers would be able to generate about 247,800 early action credits under ACC I.

• ACC I credits converted to “historical” credits in ACC II

• CARB proposing cap of 15% on use of historical credits
ZEV Credit Options – Option 5
Combination Option

- Option 5 would be a combination of early action credits and proportional credits
  - Option 5a: Option 4 (early action) and Option 1 (full proportional)
  - Option 5b: Option 4 (early action) and Option 2 (adjusted proportional)
  - Option 5c: Option 4 (early action) and Option 3 (no proportional)
## ZEV Credit Options – Summary

<table>
<thead>
<tr>
<th>Option</th>
<th>Proportional Credits Offered</th>
<th>Early Action Credits Earned</th>
<th>Total Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 1</td>
<td>283,530.56</td>
<td>0.00</td>
<td>283,530.56</td>
</tr>
<tr>
<td>Option 2</td>
<td>150,271.19</td>
<td>0.00</td>
<td>150,271.19</td>
</tr>
<tr>
<td>Option 3</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Option 4</td>
<td>0.00</td>
<td>247,843.20</td>
<td>247,843.20</td>
</tr>
<tr>
<td>Option 5a</td>
<td>283,530.56</td>
<td>247,843.20</td>
<td>531,373.76</td>
</tr>
<tr>
<td>Option 5b</td>
<td>150,271.19</td>
<td>247,843.20</td>
<td>398,114.39</td>
</tr>
<tr>
<td>Option 5c</td>
<td>0.00</td>
<td>247,843.20</td>
<td>247,843.20</td>
</tr>
</tbody>
</table>
Heavy-Duty Low NOx Omnibus Rule

Cleaner heavy-duty engines
Washington will adopt California rule by reference.

Program Elements

• Lower nitrogen oxide (NOx) and fine particle standards
  - Nitrogen oxides reduced by 75% in 2024; 90% in 2027
  - Particles reduced by 50% in 2024

• Longer useful life and warranty periods

• Improved in-use testing methods

• Improved credit banking system

• Updated Phase 2 greenhouse gas rules for trucks and trailers
Heavy-Duty Low NOx Omnibus Rule – Exemptions

- Rule exempts diesel-fueled transit bus and engine
  - Ties exemption to the California Innovative Clean Transit Rule
  - Exemption waivers for transit agencies
    - Enables continued diesel engine purchases
    - Approval letter allows manufacturers to sell buses to transit agency

- Rule exempts high horsepower engines
  - Manufacturers are not planning to design or sell high-hp (> 525 hp) compliant engines under the new standards.

- Washington intends to adopt these exemptions.
- Questions or comments
Fleet Reporting Requirement

• One-time reporting requirement on existing fleet operations
• California included this requirement in its Advanced Clean Trucks rule. Washington did not adopt a fleet reporting requirement in 2021 because our rulemaking was limited to adopting California’s vehicle emission standards.

• Applies to:
  • Vehicles weighing over 8,500 pounds
  • Fleet owners with a facility in Washington
  • Large employers (gross annual revenue above $50M, 2022 tax year)
    Includes retailers, manufacturers, restaurants, etc.
  • State, local, and federal government agencies
  • Brokers that dispatch vehicles that operate in Washington

• Exempts:
  • Military vehicles
  • Emergency vehicles

• Washington rule will include school and transit buses
Fleet Reporting Requirement

- Report information on:
  - Owner/broker
  - Number of vehicles
  - Weight class
  - Fuel type
  - Operating characteristics: Daily/annual miles traveled, vehicle usage information, and types of trailers
  - Average vehicle retention time
  - Characteristics of home base facilities (location where vehicle is parked at night)
  - Reporting period
Fleet Reporting Requirement

• Executive Order 21-04 Zero Emission Vehicles
  - Requires vehicle electrification of executive and small cabinet agencies
  - Administered by State Efficiency and Environmental Performance (SEEP) Office
  - SEEP will provide data for agencies participating in EO 21-04. Avoids duplication and reduces confusion.

• Reporting period: Collect data from 2022
• Submission date: Under discussion
• Reporting form: Ecology will develop
Fleet Reporting Requirement

For consideration:

• What size fleet should be required to report?
  • California – 50 vehicles
  • Oregon – 5 vehicles

• Schools, school districts, and transit agencies
  California excluded schools, school districts, and transit agencies because they had collected data on these fleets through other programs.
  Washington is considering including them because we do not have this information.

• Reporting deadline: Considering Fall 2023
  What date for the fleet reporting?
Adoption by Reference
General Regulations for Air Pollution Sources

• Revise 5 sections in Chapter 173-400 WAC
  • Section 025 Adoption by reference
  • Section 050 Emission standards for combustion and incineration units
    - Update requirements for incineration units
  • Section 070 Emission standards for certain source categories
    - Update requirements for landfills
  • Section 115 Standards of performance for new sources
    - Update list of emission guidelines
  • Section 720 Prevention of significant deterioration (PSD)
    - Clarify that pre-2020 definition of “project emissions accounting” applies in Washington

• Questions or comments
Next Steps

• Upcoming stakeholder meetings
  - April 19, 2022, 9 a.m. – 11 a.m.
    - Draft rule language
  - May 24, 2022, 9 a.m. – 11 a.m.
    - Draft rule language

• Comment online
  Informal public comment period ends May 29, 2022
  https://aq.ecology.commentinput.com/?id=UZmpG

• Rulemaking web page
  (search for ZEV or ZEV rulemaking)
More Information

• Join project email list: elena.guilfoil@ecy.wa.gov

• Rulemaking Lead
  Elena Guilfoil
  elena.guilfoil@ecy.wa.gov
  360-972-5166

• Technical Lead
  Dustin Watson
  dustin.watson@ecy.wa.gov
  360-764-6785