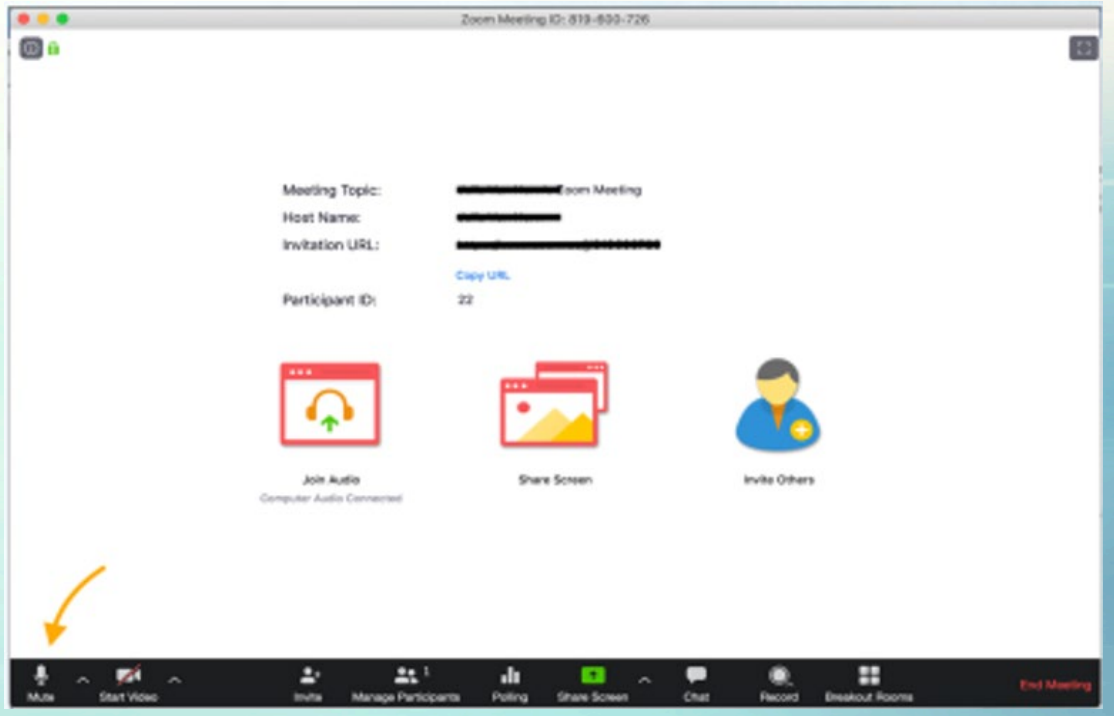
Advanced Clean Cars (ACC) II Workshop

August 11, 2021

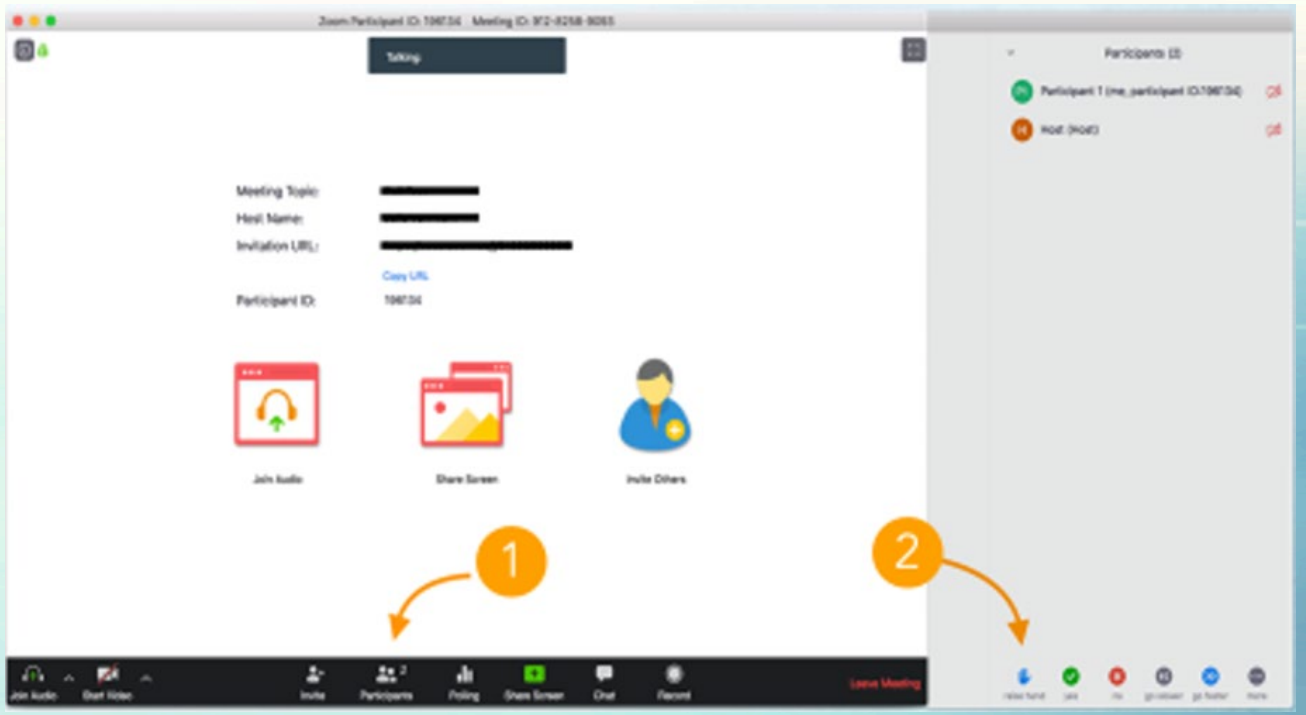
Zoom Orientation

- Attendees will remain on mute until called on in the speaking queue
  - Zoom: **Mute/Unmute** button at the bottom left
  - Phone: Dial ***6** to mute/unmute
- Click the camera icon at the bottom left of your screen to toggle your video on and off



Raise Hand

- To be added to the speaking queue, please use **Raise Hand**
  - Zoom: Click **Participants**, then **Raise Hand**
  - Phone: We'll check in with the phone line periodically



Workshop Logistics

- Today's workshop presentation is posted
  - https://ww2.arb.ca.gov/advanced-clean-cars-ii-meetings-workshops
- This workshop is being recorded
  - Subscribe to the Advanced Clean Cars email list for updates

Workshop Logistics

- Questions can be sent via the Zoom Q&A box
  - Follow-up questions can be sent to cleancars@arb.ca.gov
- Written comments may be submitted using the ACC II Workshop #3 informal comment submittal form
- Comments submitted can be viewed on the ACC II workshop comments log webpage

Workshop Agenda

- Environmental Justice Proposals to Increase Access to Zero-Emission Vehicles (ZEVs)
- ZEV Regulation Update: Minimum Requirements
- CEQA Scoping: Recap of ZEV and Low-Emission Vehicle (LEV) Proposals
- SRIA Alternative Request & Next Steps

Clean Car Regulations

1990

Low-Emission Vehicle Regulation + ZEV Requirements

1998

Low-Emission Vehicle II Regulation + ZEV

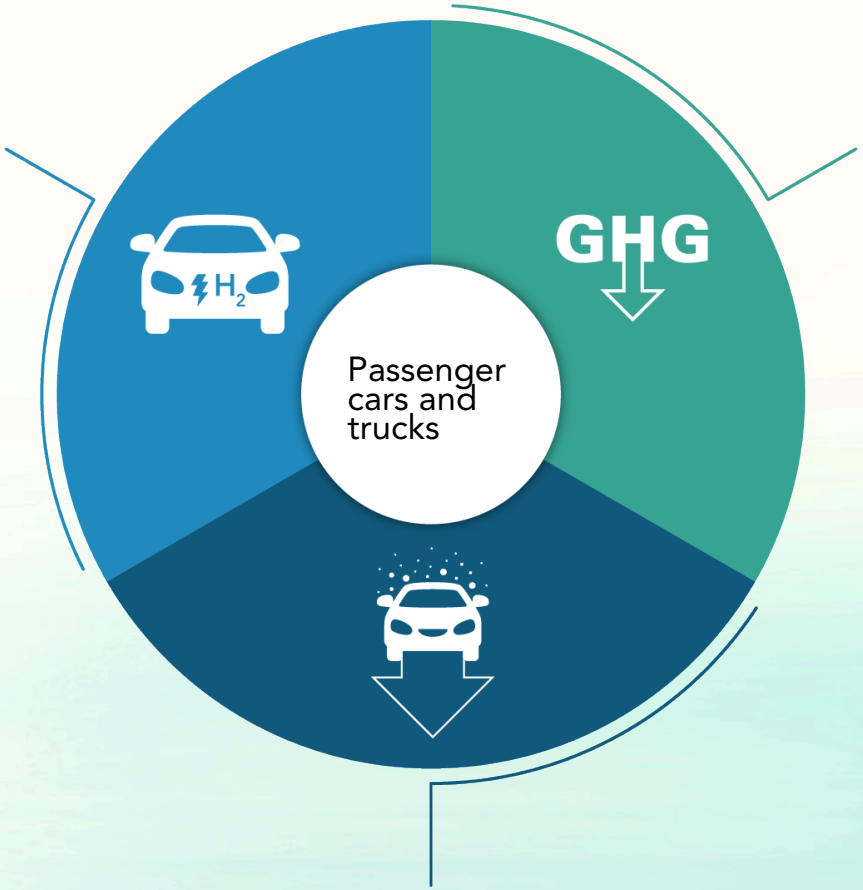
2012

Advanced Clean Cars Program /Regulations

CARB

Zero-Emission Vehicle (ZEV) Regulation

– Accelerates ZEV deployment



Low-Emission Vehicle (LEV) GHG Regulation

– Reduces climate change impacts

Low-Emission Vehicle (LEV) Criteria Regulation

– Reduces air quality impacts

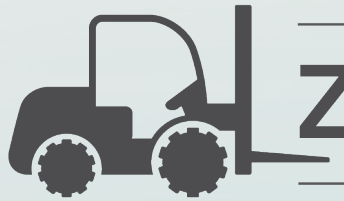
CARB

Governor's Executive Order N-79-20

100% ZEV sales by 2035

Full transition to
ZEV short-haul/drayage trucks
by 2035

Full transition to **ZEV buses** &
heavy-duty long-haul trucks
by 2045*



Full transition to
ZE off-road equipment
by 2035*

*where feasible

CARB

Advanced Clean Cars II Rulemaking

- Continue to clean up gasoline cars
- Ensure emission controls better match driver behavior
- Add standards for heavier passenger trucks
- Increase market share of electric vehicles
- Improve electric vehicles for all consumers
- Achieve environmental justice goals

ACC II Environmental Justice Strategy

- Increase community engagement
- Strive to disproportionately benefit impacted communities
- Increase focus on all consumers – ZEV assurance measures; ZEV minimum technical requirements
- Explore additional provisions that can help achieve more equitable outcomes for our underserved communities

What we have heard from the community and EJ advocates

- Increase production of electric cars
- Automakers should produce electric cars with more range
- ZEV affordability is a concern
- Increase ZEV ownership of new and/or used ZEVs by community members
- Increase ZEV mobility and access to ZEV transportation by community members to meet their day-to-day transportation needs

SB 350 Barriers Report

In making vehicle purchase decisions, clean vehicles are not yet viewed as affordable, reliable or as convenient as gas counterparts. Residents lack awareness of clean vehicles and have anxieties and fears of newer technologies, resulting in a reluctance to purchase advanced technology clean vehicles.

Assuring Consumers about ZEVs

- Protect Emission Reductions
  - Assure ZEVs can fully replace gasoline vehicles for a consumer
- Keep All Consumers In Mind
  - Ensure ZEVs meet unique needs for affordability, durability, and charging over the vehicle's life
- Increase Transparency
  - Disclosure battery health and warranty coverage to build consumer confidence
- Bring the independent repair industry into the fold
- Simplify charging for ease of use

New Proposed Concept: EJ Credits

- EJ credits for manufacturers who take action to help increase affordable access to ZEVs for our underserved communities
- EJ credits are a distinct new category
  - Credits can be used in model years 2026 through 2031
  - Credits expire after model year 2031
  - 5% cap on the number of EJ credits allowed to fulfill a manufacturer's obligation in any year

EJ Credit Categories

Community Program

Used ZEV

EJ Credit Category: Community Program

- Increase clean transportation options for priority communities
- Concept: A new ZEV or plug-in hybrid electric vehicle (PHEV) provided at discount for use in a community-based clean mobility program may earn extra credit

Minimum Percent Discount

- ZEVs and PHEVs eligible for community program EJ credits must be offered at a minimum percent discount based on the vehicle MSRP

MSRP Low	MSRP High	Percent Discount	Discount Value Low	Discount Value High
-	$20,000	5%	-	$1,000
$20,001	$22,500	10%	$2,000	$2,250
$22,501	$25,000	11%	$2,475	$2,750
$25,001	$27,500	12%	$3,000	$3,300
$27,501	$30,000	13%	$3,575	$3,900
$30,001	$32,500	14%	$4,200	$4,550
$32,501	$35,000	15%	$4,875	$5,250
$35,001	$37,500	16%	$5,600	$6,000
$37,501	$40,000	17%	$6,375	$6,800
$40,001	$42,500	18%	$7,200	$7,650
$42,501	$45,000	19%	$8,075	$8,550
$45,001	$47,500	20%	$9,000	$9,500
$47,501	$50,000	21%	$9,975	$10,500
$50,001	$52,500	22%	$11,000	$11,550
$52,501	$55,000	23%	$12,075	$12,650
$55,001	$57,500	24%	$13,200	$13,800
$57,501	$60,000	25%	$14,375	$15,000

CARB

Community Program: Vehicle Eligibility

- PHEVs are only eligible for vehicle models with 6-seat capacity or more
- Vehicles must be registered in California
- Vehicles must be put into service exclusively for the purposes of operating a community-based clean mobility program
- Vehicle titles or lease agreements must be held by an organizational entity, not by individual drivers

Proposed Community Program EJ Credit Earned per Vehicle

A new ZEV or PHEV provided at discount for use in a community program may earn EJ credit:

Type of Vehicle	Model Year	EJ Credit
New ZEV	2026 through 2031	0.50
New PHEV*	2026 through 2031	0.40

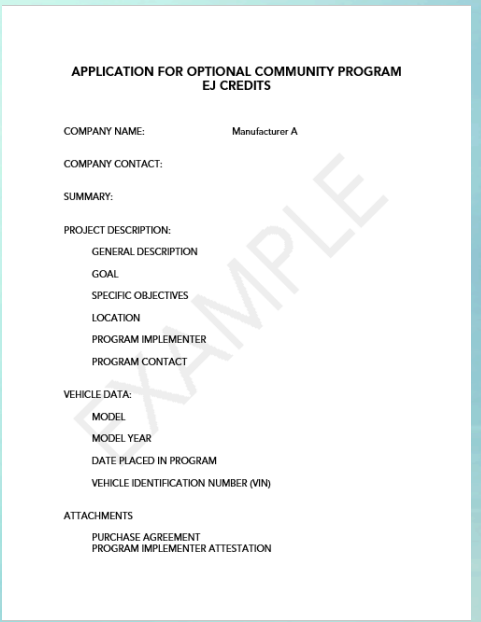
*PHEVs are only eligible for vehicle models with 6-seat capacity or more

Community-Based Clean Mobility Program

- A community-based clean mobility program must meet the eligibility criteria of one of the following:
  - Clean Mobility Options Pilot Program (CMO)
  - Sustainable Transportation Equity Project (STEP)
    - Community transportation needs assessments or planning/ capacity building feed into clean mobility projects
      - Electric carshare
      - Vanpools and carpooling
      - Ride-on-demand services
      - Innovative transit services

Community Program: EO Approval

- Alternatively, the manufacturer must demonstrate to the Executive Officer (EO) that the discounted eligible vehicle will be used as part of a community program
  - The program may include community-identified mobility options that increase access to clean transportation and zero-emission mobility



APPLICATION FOR OPTIONAL COMMUNITY PROGRAM
EJ CREDITS

COMPANY NAME: Manufacturer A

COMPANY CONTACT:

SUMMARY:

PROJECT DESCRIPTION:
- GENERAL DESCRIPTION
- GOAL
- SPECIFIC OBJECTIVES
- LOCATION
- PROGRAM IMPLEMENTER
- PROGRAM CONTACT

VEHICLE DATA:
- MODEL
- MODEL YEAR
- DATE PLACED IN PROGRAM
- VEHICLE IDENTIFICATION NUMBER (VIN)

ATTACHMENTS
- PURCHASE AGREEMENT
- PROGRAM IMPLEMENTER ATTESTATION

EXAMPLE

Community Program: Project Area

- The community program project area is the geographic area where community residents live, services operate, and infrastructure is installed
- Boundaries of the project area must be within at least one of the following geographies:
  - A low-income community
  - A disadvantaged community
  - Tribal lands within a low-income or disadvantaged community
  - A community in which at least 75% of public-school students in the project area are eligible to receive free or reduced-price meals

Community Program: Implementer

- The community program must be implemented by:
  - A community-based organization
  - A Native American Tribe
  - A public agency or nonprofit organization
    - that has received a letter of support from a project-related community-based organization or local community group

Community Program: Verification

- Manufacturer must provide:
  - Vehicle VIN, MSRP, and purchase agreement
  - Community program description, objectives, location, and contact information
  - An attestation from the program implementer confirming:
    - the percent discount applied off MSRP
    - that the community-based clean mobility program meets the eligibility requirements

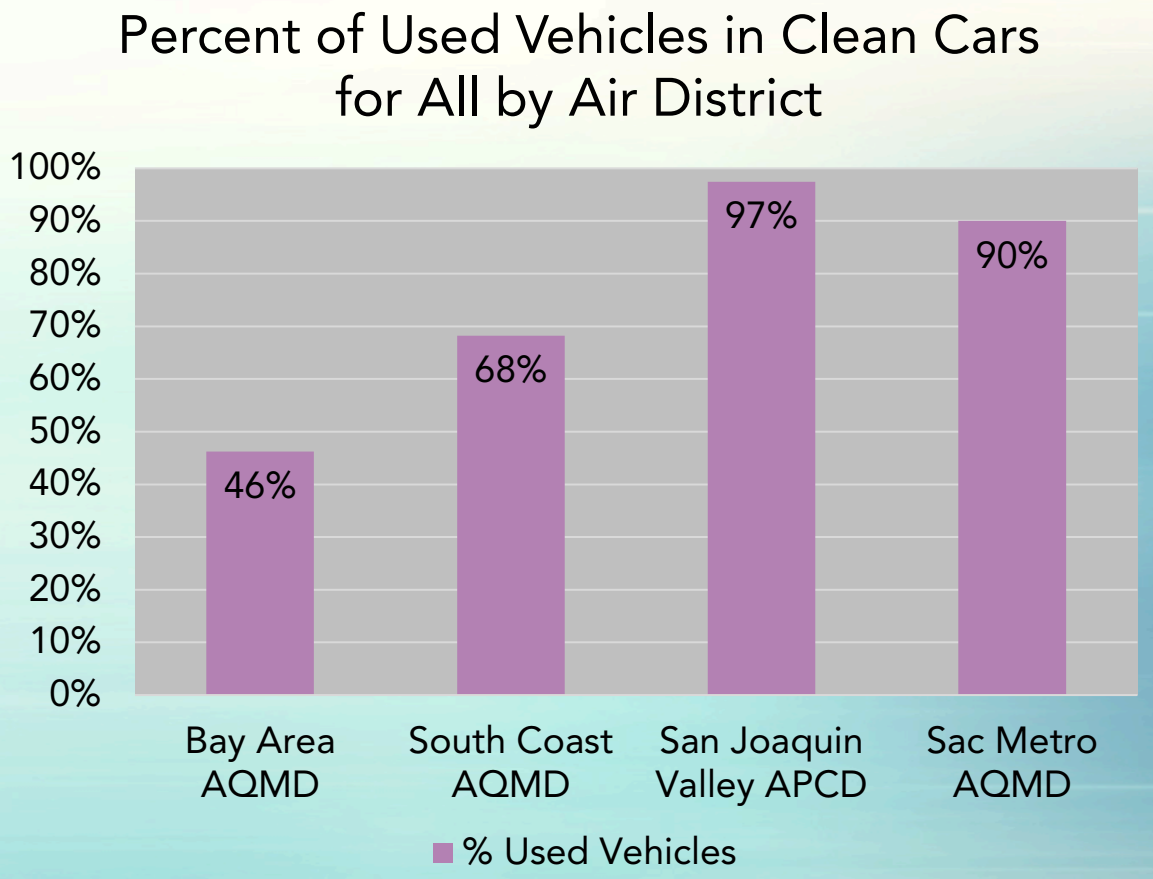
EJ Credit Categories

Community Program

Used ZEV

EJ Credit Category: Used ZEV

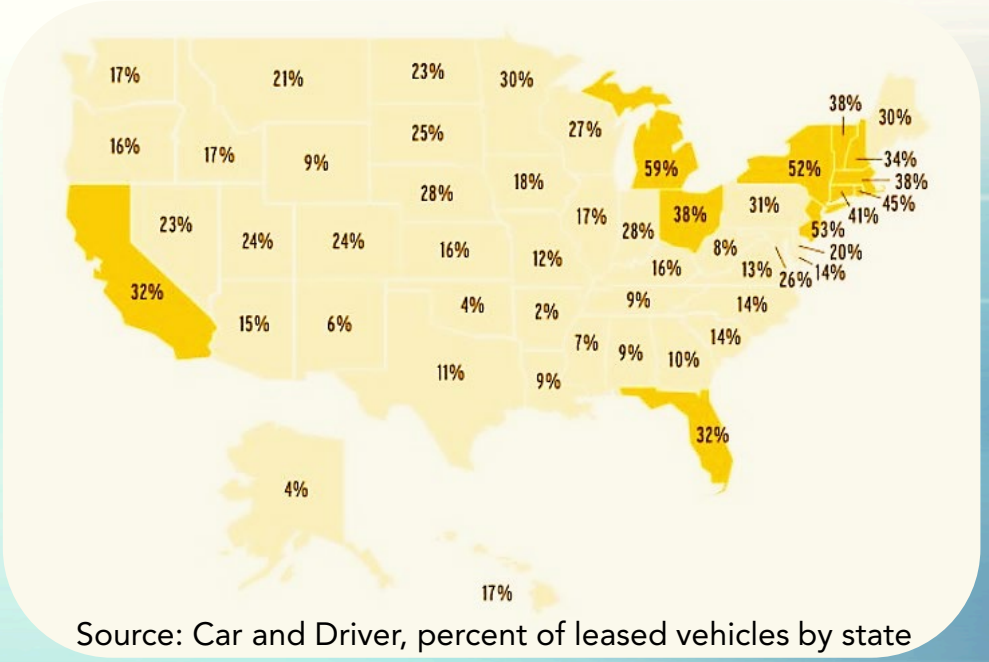
- 70% of consumers purchased used cars
- ~75% of Clean Cars 4 All grants have been awarded for used vehicles
- Used vehicles tend to be purchased at higher rates by low-income consumers[1]



[1] https://cleanvehiclegrants.org/program-data/

Used ZEVs & Leased Vehicles

- Nationwide about 1 in 4 new vehicles are leased and not purchased
- Clean Vehicle Rebate Project (CVRP) survey statistics indicate ~70% of battery electric vehicles have been leased and not purchased[1]



Source: Car and Driver, percent of leased vehicles by state

[1] CVRP EV Consumer Survey Dashboard, https://cleanvehiclerebate.org/eng/survey-dashboard/ev

Proposal: EJ Credit for Used ZEVs

- To increase access to more affordable used ZEVs for consumers in California
- Concept: A leased ZEV originally offered at or below $40,000 (MSRP) may receive extra credit the next year it is registered for operation (either purchased or leased) in California beyond its three years of service as a leased vehicle

Used ZEV Eligibility

Vehicle Eligibility

- ZEV only
- Leased 2026-2028 vehicle
- MSRP cap $40,000* (when vehicle was new)

*MSRP cap is determined by the minimum base model price

Vehicle Model	Eligible based on MSRP Cap
BMW i3	Not eligible
Ford Mustang Mach-E	Not eligible
Volkswagen ID.4	Yes
Kia Niro Electric	Yes
Hyundai Kona Electric	Yes
Chevrolet Bolt EV	Yes
Honda Clarity Electric	Yes
Tesla Model 3	Yes
Kia Soul EV	Yes
Volkswagen e-Golf	Yes
Hyundai Ioniq Electric	Yes
Nissan LEAF	Yes
MINI Cooper SE	Yes

EJ Credit Value for Used ZEVs

Type of Vehicle	Vehicle Model Year	EJ Credit
Used ZEV	2026 through 2028	0.10

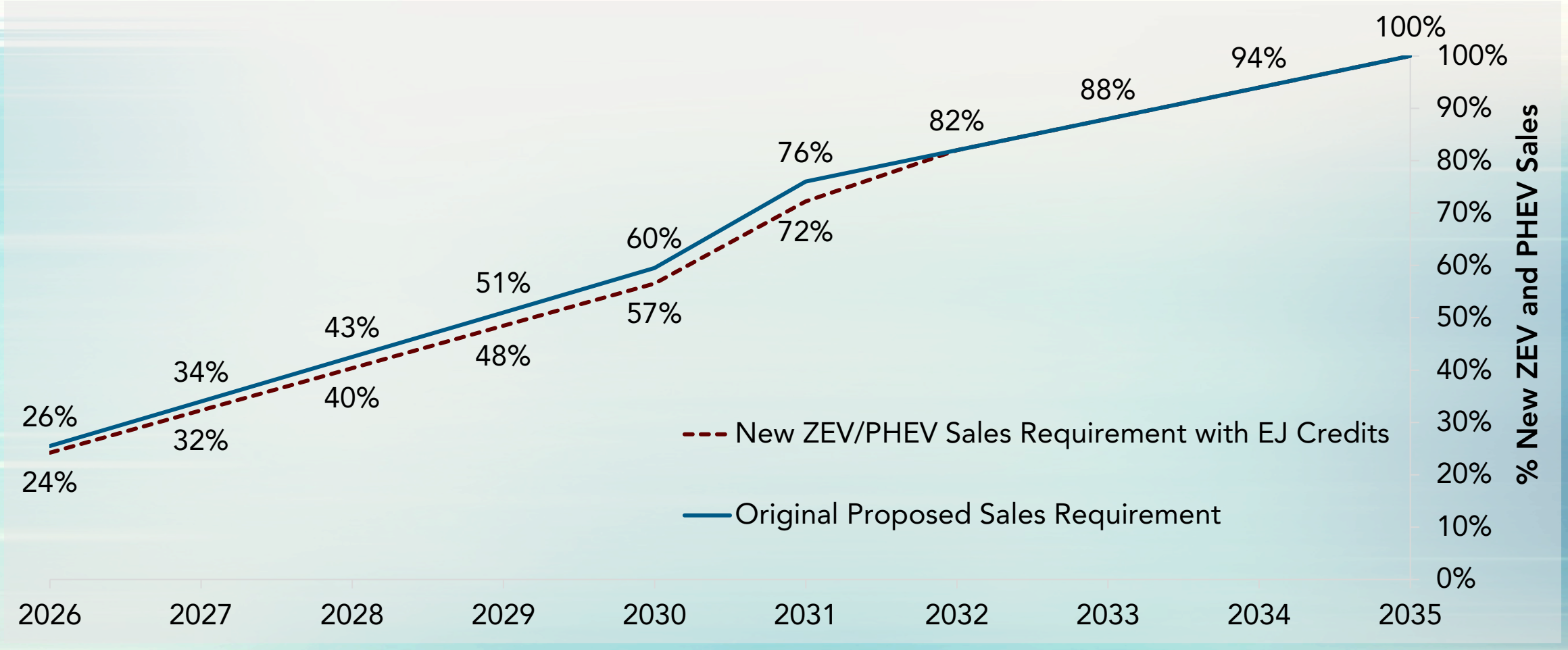
- Effective vehicle model years: 2026 through 2028
  - EJ credit is earned in model years 2029-2031
  - EJ credit cannot be earned or used after model year 2031
- EJ credit is one-time credit earned after 1 full year in California after end of lease

EJ Credits Summary

EJ Credit Category	EJ Credit per PHEV*	EJ Credit per ZEV	Model Year EJ Credits Generated
Community Program	0.40	0.50	2026-2031
Used ZEV	N/A	0.10	2029-2031

*PHEVs are only eligible for vehicle models with 6-seat capacity or more

Proposed CA ZEV Stringency with EJ Credits



What Are Your Thoughts

- Do you think the concepts for EJ credit help achieve the goal of increasing affordable access to ZEVs for our underserved communities?
- How can we best focus the used ZEV EJ credit option to ensure we provide more direct benefits to our underserved communities? Should we provide additional credit for a used ZEV that is placed in a community mobility or low-income program?
- Are the concepts for EJ credit best suited as a regulatory measure?
- What other ideas for EJ credit should we consider?
- In what ways do you think automakers can best help increase access to electric cars?

Workshop Agenda

- Environmental Justice Proposals to Increase Access to Zero-Emission Vehicles (ZEVs)
- **ZEV Regulation Update: Minimum Requirements**
- CEQA Scoping: Recap of ZEV and Low-Emission Vehicle (LEV) Proposals
- SRIA Alternative Request & Next Steps

Proposed Changes to Minimum Requirements for ZEV Credit (pure ZEVs)

Category	Current (through 2025)	Proposal (2026+)
Range	50 miles UDDS	200 miles 2 cycle
Level 2 J1772 (or adapter)	Required	Required (no change)
On Board Charger Size	3.3 kW	5.76 kW
Convenience Cord	Not Required	Required (120 and 240V)
DCFC Capability	Not Required	Required
DCFC Inlet	Not Required	CCS or Adapter
Neighborhood Electric Vehicles	Separate requirements and treatment	Not allowed to count toward requirement

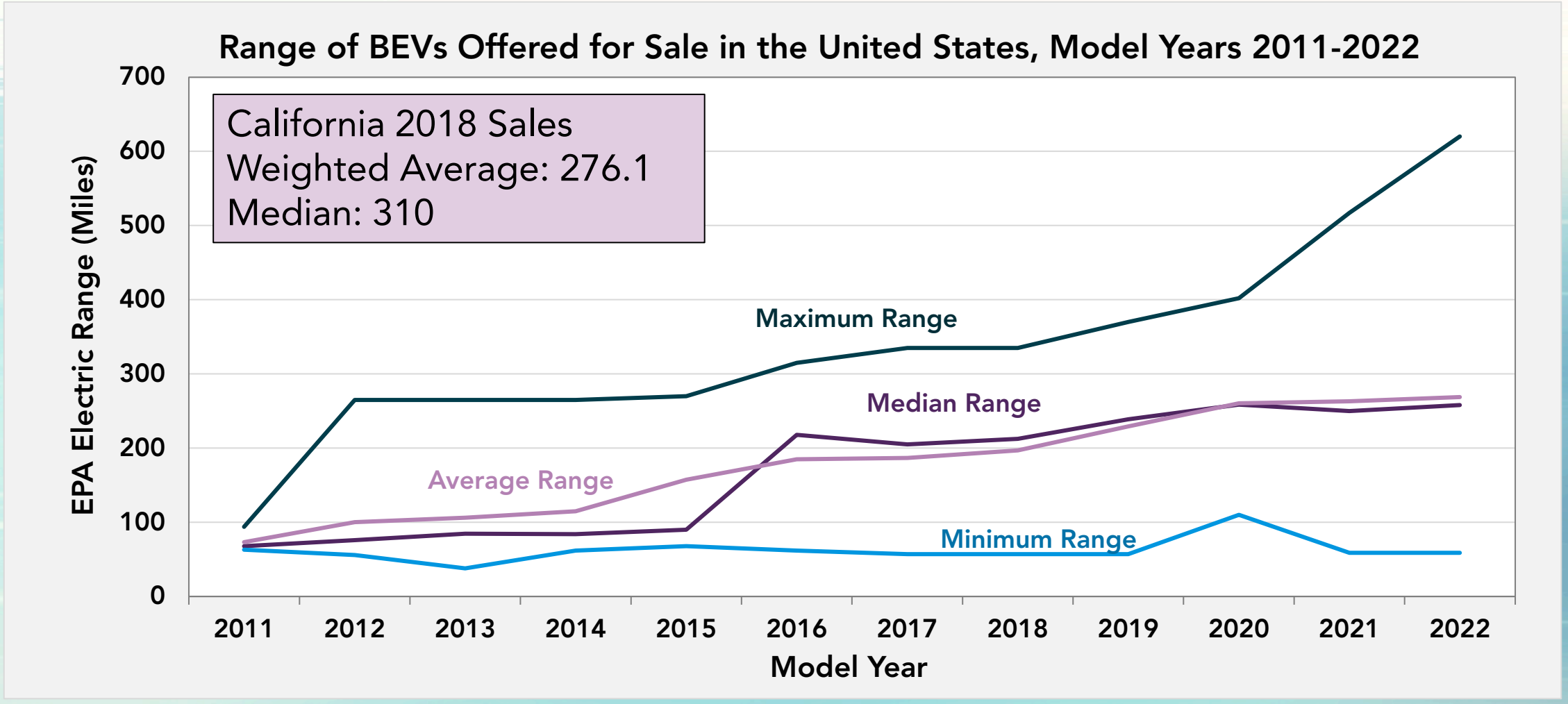
Updating Minimum Requirements

- Stakeholder input since May workshop
- Effect on low-income consumers in the new and used market
- ZEV Assurance Measures (i.e., durability)
- Current state of technology
- Cost implications

Sizing for the Minimums

- 150 Label Range + Durability Standard > 100 miles electric range
- 5.76 kW On-Board Charger
  - Homes often have 30-amp dryer outlet
  - Appropriate Level 2 minimum power capability for a 150-mile BEV to sufficiently charge in 8-hour (overnight) period assuming 30-amp circuit

Range is Increasing



Proposed Technical Minimums for 2026 and Subsequent Model Years for ZEV Credits

Category	Proposal (2026+)
Range	200 miles 2 cycle range (~150 mile label range)
Level 2 J1772 (or adapter)	J1772 Level 2 connector or adapter (No change)
On Board Charger Size	At least 5.76 kW on-board charger
Convenience Cord	Required to include convenience cord with vehicle that is capable of both Level 1 and Level 2 charging (120V and 240V)
DCFC Capability & Inlet	Required DCFC capability and inlet (CCS or adapter) for BEVs
Neighborhood Electric Vehicles	NEVs will not count toward requirement

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Environmental Analysis

- Environmental Analysis (EA) being prepared analyzing potentially significant adverse impacts caused by reasonably foreseeable actions
- Meets requirements of CARB's certified program under the California Environmental Quality Act (CEQA)
- The CEQA Environmental Checklist (CEQA Guidelines Appendix G) is used to identify and evaluate potential indirect impacts
- The EA will be an appendix to the Staff Report

Environmental Analysis to be Prepared

- The EA will include:
  - Description of reasonably foreseeable actions taken in response to the proposal
  - Programmatic level analysis of potential adverse impacts caused by reasonably foreseeable actions
  - Feasible mitigation measures to reduce/avoid significant impacts
  - Alternatives analysis
- Input invited at this early stage on appropriate scope and content of the EA
- Draft EA will be released for 45-day public comment period

ZEV Proposals

Planned ZEV Amendments

- Focus on simplifying and strengthening the regulation toward 100% ZEV goal
  - Reduce credits awarded per ZEV
  - Limit post-2025 credit life
  - Limit pre-2026 credit life and reduce and cap historical balances
- Raise minimum requirements for qualifying PHEVs and ZEVs

ZEV Assurance Proposals: Summary

- Durability (useful life) requirements
- Minimum warranty requirements
- Service information and data requirements
- Vehicle and battery state-of health monitoring
- Standardize DC fast charge inlet
- Increase recyclability of batteries through labeling requirement

LEV Proposals

LEV Amendments for Light-Duty Vehicles

1. Adjust NMOG+NOx fleet average standards
   - Remove ZEVs from NMOG+NOx fleet average
   - Require 0.030 g/mile fleet average for NMOG+NOx for non-ZEVs
   - Changes to emission certification bins
     - Eliminate dirtiest bins (LEV160 and ULEV125)
     - Add intermediate bins (ULEV60, ULEV40, SULEV25)
     - Add cleaner bins (SULEV10 and/or SULEV15)
2. Require all vehicles to meet stand-alone SFTP standards
   - Eliminate composite SFTP emission certification option
   - Tighten stand-alone US06 standards to FTP emission levels

LEV Amendments for Light-Duty Vehicles

3. Strengthen PM standard for aggressive driving
   - Phase-in to 3 mg/mile PM on US06 cycle
4. Regulate cold-start emissions for all soak durations
   - FTP emission standard must be met for soaks of 3 hours or greater
   - Require emission linearity between 10 min soak and 3 hour soak
5. Control cold-start emissions for early drive-away
   - Set new standard based on best performing vehicles
6. New standard to regulate PHEV aggressive driving cold-start emissions
   - New cold-start US06 charge-depleting emission test standard
   - Exemption for PHEVs that can drive US06 fully electric

LEV Amendments for Medium-Duty Vehicles

1. Adopt in-use test procedures and standards from the HD Low NOx Omnibus Rulemaking for chassis certified MDVs
2. Require class 2b and class 3 to meet stand-alone standards for US06/LA92 test cycles
3. Consider lowering NMOG+NOx fleet average for chassis certified MDVs in class 2b and class 3
4. Take out ZEVs from the MDV fleet-average
5. Remove dirtiest FTP NMOG+NOx emission certification bins and possibly add new lower bins

LEV Amendments for Evaporative Emissions

1. Tighten Running Loss Standard: from 0.05 to 0.01 g/mile
    - Most vehicles meeting this now but some higher emitting
    - Eliminate dirtiest, ensure good designs remain the norm
2. Puff Emissions Proposal
    - Unique to special sealed gasoline tanks common on PHEVs (and some HEVs)
    - Specify minimum canister size in regulation
    - Emission protection without adding test burden

ACC II A/C Concepts

- Limit GWP (>150) refrigerants in new LDV A/C systems
  - Ensure continued industry low-GWP transition
  - Contribute to meeting State's HFC reduction goals
  - Align with EU MAC Directive
- Update A/C Leakage Credits
  - Incentivize lower-GWP refrigerants
  - Incentivize lower leak rate

Q & A

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Standardized Regulatory Impact Assessment (SRIA) Request for Alternatives

- Pursuant to SB 617[1] CARB welcomes public input on alternatives to the draft regulatory proposal discussed in this workshop
- In particular, CARB encourages public input on alternative approaches that:
  - may yield the same or greater benefits than those associated with the proposed regulation, or
  - may achieve the goals at lower cost

[1] Under SB 617:
http://dof.ca.gov/Forecasting/Economics/Major_Regulations/SB_617_Rulemaking_Documents/documents/Section%20200 0%20ISOR%201%20sb_617_bill_20111006_chaptered.pdf
See also the Department of Finance's implementing regulations CCR Title 1, Division 3, §2000-2004

Standardized Regulatory Impact Assessment (SRIA) Request for Alternatives

- Please ensure the submission discusses the alternative's ability to fulfill the purposes of the draft regulatory proposal as CARB has presented it
- Please submit the associated cost/benefit information and data sources to enable comparison of economic impacts
- Please also submit a clear description of the basis for any cost calculations

ACC II Timeline

Opportunities for Comments

- Written comments may be submitted using the ACC II Workshop #3 informal comment submittal form through September 1, 2021
  - Comments submitted can be viewed on the ACC II workshop comments log webpage
- Subscribe to the Advanced Clean Cars email list for updates on document availability and future workshops