



NEVADA DIVISION OF
**ENVIRONMENTAL
PROTECTION**



Nevada Department of
**CONSERVATION &
NATURAL RESOURCES**

Nevada Division of Environmental Protection

Clean Cars Nevada

On the Road to a Cleaner Nevada

March 30, 2021

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TECHNICAL SESSION – ZERO EMISSION VEHICLE (ZEV) PROGRAM MARCH 30, 2021 @ 9:00 TO 11:00 AM



Presentation Outline

- Introduction
- Technical Session 1 – Low Emission Vehicle (LEV) Program Recap
 - Manufacturer Definitions
 - Vehicle Definitions
- Definitions
- Credit Requirements

TECHNICAL SESSION – ZERO EMISSION VEHICLE (ZEV) PROGRAM MARCH 30, 2021 @ 9:00 TO 11:00 AM



Presentation Outline (continued)

- Credit Compliance
 - Early Credits
 - Initial Proportional Credits
- Schedule
- Public Comments
- Where to Find Out More
- Save the Date – Technical Session 3
- Questions



Clean Cars Nevada is Proposing the Evaluation and Potential Adoption of Two New Regulatory Programs



Low Emission Vehicle (LEV) Program - Meet emission requirements that reduce greenhouse gases, criteria air pollutants, and hazardous air pollutants.



Zero Emission Vehicle (ZEV) Program - Introduction of clean vehicle technology in Nevada.



The goal of today's webinar is to provide an overview of the ZEV Program and its potential implementation in Nevada. The ZEV program contains many detailed requirements, and it is not the intent of this webinar to cover each of these requirements.

The provisions of this regulation set forth the ZEV percentage requirements for new motor vehicles in this State beginning with Model Year 2025.

LOW EMISSION VEHICLE (LEV) PROGRAM RECAP

- ✓ Manufacturer Definitions (based on sale volumes in California):
 - Small Volume (e.g., Mitsubishi, or Tesla until recently)
 - Intermediate Volume (e.g., Subaru, Mazda)
 - Large Volume (e.g., General Motors, Ford)

- ✓ Vehicle Definitions:
 - Passenger Car
 - Light-Duty Truck
 - Medium-Duty Passenger Vehicle
 - Medium-Duty Vehicle

LOW EMISSION VEHICLE (LEV) PROGRAM RECAP

(CONTINUED)



Certification



Exhaust Emission Standards and Test Procedures

- LEV - Criteria Air Pollutants
- LEV - Greenhouse Gases



Approval of Motor Vehicle Pollution Control Devices for New Vehicles

- Labels
- Reporting
- Compliance

LOW EMISSION VEHICLE (LEV) PROGRAM RECAP

(CONTINUED)



Emission Control System Warranty



Recalls

CREDIT REQUIREMENTS – OVERVIEW


Credit requirements are calculated as the percentage of total light-duty vehicles (passenger cars and light-duty trucks) that are sold in the state. In general, 3 years are used to determine the average sales.

Model Year	Credit Percentage Requirement
2018	4.5%
2019	7.0%
2020	9.5%
2021	12.0%
2022	14.5%
2023	17.0%
2024	19.5%
2025 and subsequent	22.0%


*Example: A car manufacturer has sold on average **40,000** light-duty vehicles in Nevada for MYs 2021, 2022, and 2023.*

*For MY 2025, its credit requirement is **8,800**.*

CREDIT REQUIREMENTS – DEFINITIONS

 “Zero emission vehicle” or “ZEV” means a vehicle that produces zero exhaust emissions of any criteria pollutant, precursor pollutant or greenhouse gas under any possible operational mode or condition. There are two classes of ZEV:

- Battery electric vehicles (BEV), which are vehicles that operate solely by use of a battery or battery pack; and
- Fuel cell electric vehicles (FCEV), which are ZEVs fueled primarily by hydrogen.

 “Transitional zero emission vehicle” or “TZEV” is a term used to describe qualifying partial zero emission vehicles. There are two classes of TZEV:

- Plug-in hybrid electric vehicles (PHEV), which are vehicles that can be operated with an internal combustion engine as well as a battery or battery pack which can be recharged by plugging into an external source of electric power; and
- Hydrogen internal combustion engine vehicles.

CREDIT REQUIREMENTS – SIZE OF MANUFACTURERS

The size of the car manufacturer (large, intermediate, or small) determines how the manufacturer must comply with the program's credit requirements.

Large Volume Manufacturers must meet a minimum percentage of credits with ZEVs (BEVs or FCEVs)

Model Year	Minimum ZEV floor	TZEVs
2022	10%	4.5%
2023	12%	5.0%
2024	14%	5.5%
2025 and subsequent	16%	6%

Example: A large volume manufacturer has a credit requirement of 8,800 credits for Nevada.

*For MY 2025, it can meet those credits with **at least 6,400 credits from sales of BEVs and 2,400 credits from PHEVs***



FIAT 500e, Tesla Model 3, and Toyota Prius Prime

CREDIT REQUIREMENTS – SIZE OF MANUFACTURERS

(CONTINUED)

The size of the car manufacturer (large, intermediate, or small) determines how the manufacturer must comply with the program's credit requirements.

Intermediate Volume Manufacturers can meet their requirements with any mix of ZEV and TZEV (PHEV) credits

Model Year	Minimum ZEV floor	TZEVs
2022	0%	14.5%
2023	0%	17%
2024	0%	19.5%
2025 and subsequent	0%	22%

Example: An Intermediate volume manufacturer has a credit requirement of 8,800 credits for Nevada.

For MY 2025, it can meet those credits with sales coming from all TZEVs (but it can use ZEV sales as well)



Kia Niro, Chevrolet Volt, and Ford Fusion Energi

CREDIT REQUIREMENTS – SIZE OF MANUFACTURERS

(CONTINUED)

The size of the car manufacturer (large, intermediate, or small) determines how the manufacturer must comply with the program's credit requirements.

Small Volume Manufacturers don't have ZEV requirements — BUT — they can still acquire credits to bank or trade with other manufacturers

Example: A Small volume manufacturer has no credit requirement, but it sold BEVs and PHEVs in Nevada for an equivalent of 8,800 credits. It can bank those credits (because it may become intermediate in the future) or exchange them on the Nevada credit market. Small volume manufacturers may transfer those credits to Large and Intermediate manufacturers in order to fulfill their credit requirements.



Mitsubishi Outlander,
Ferrari SF90, and
Honda Clarity

CREDIT COMPLIANCE

ZEV and TZEV models do not generate the same credits

ZEV credits are based on their Urban Dynamometer Driving Schedule range. The UDDS range is the range an electric vehicle will travel on a single charge, under city driving conditions:

ZEV Credit = $0.01 * \text{UDDS Range} + 0.50$

- No credits with less than 50 miles UDDS
- Max 4 credits per vehicle (equivalent to 350 UDDS miles)

Example:

- *Tesla Model 3 approx. 340 miles = approx. 3.9 credits per vehicle*
- *FIAT 500e approx. 100 miles = approx. 1.5 credits per vehicle*

CREDIT COMPLIANCE (CONTINUED)

TZEV credits are based on their Urban Dynamometer Driving Schedule range. The UDDS range is the range an electric vehicle will travel on a single charge, under city driving conditions

UDDS Test Cycle Range	Credit Allowance
< 10 all electric miles	0
>= 10	TZEV credits= $0.01 * \text{UDDS} + 0.30$
> 80	1.10

US06 all electric range capability of at least 10 miles, earn an additional 0.2 credits

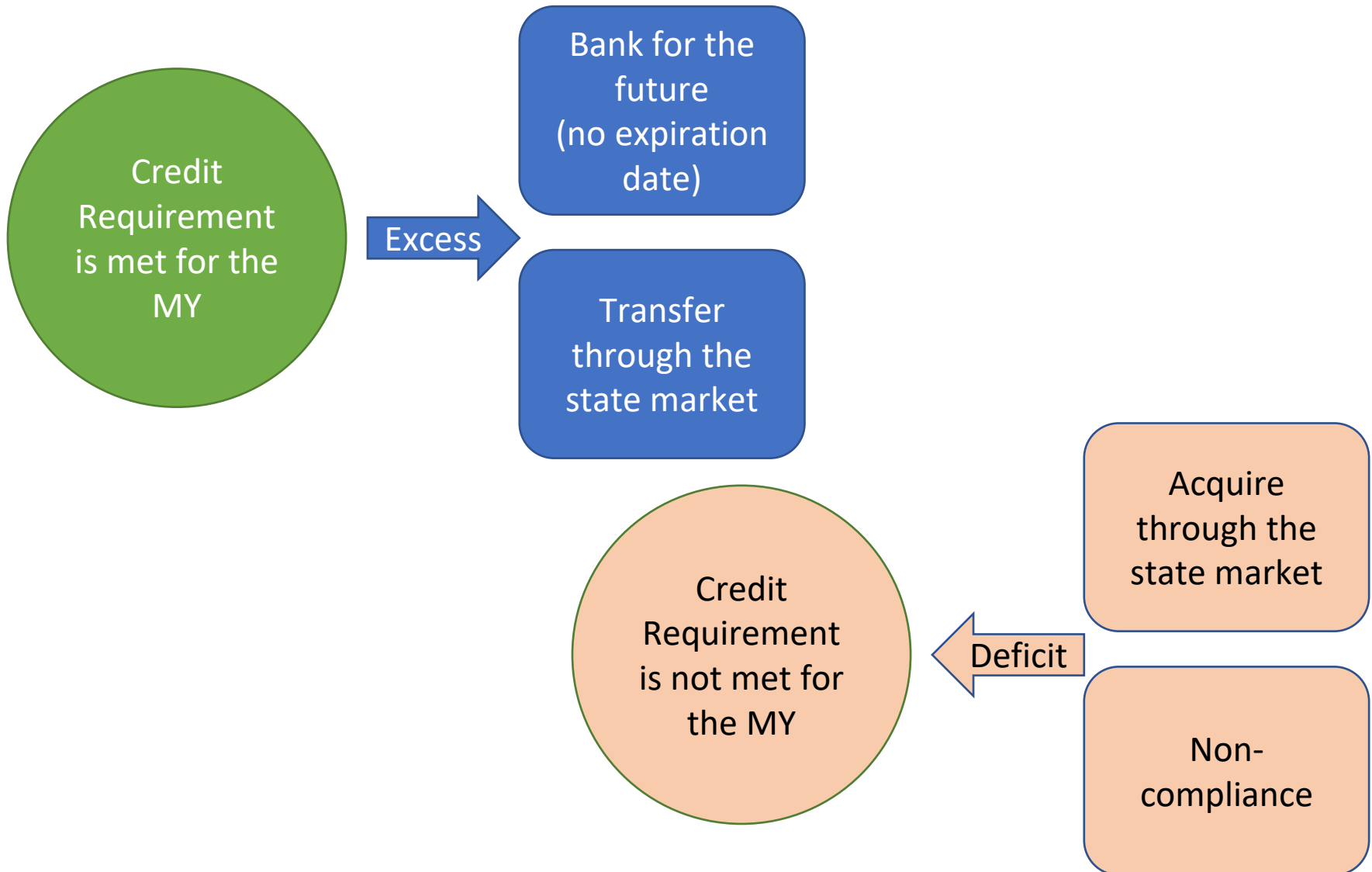
Example:

- *Chevrolet Volt- approx. 30 miles = approx. 0.6 credits per vehicle*
- *Ford Fusion Energi approx. 100 miles = approx. 1.1 credits per vehicle*

CREDIT COMPLIANCE (CONTINUED)

- Separate accounts are kept for the different category of vehicles in the ZEV program (i.e., ZEV, TZEV, NEV, and BEVx)
- There are other ways to accumulate credits for a manufacturer, based on sales of other types of ZEV program compliant vehicles, demonstration programs, etc.
- Credits in each category must be used to meet the requirements for that category
- Though there are ways to move credits across categories (in general to lesser credit earning category)

CREDIT COMPLIANCE (CONTINUED)



CREDIT COMPLIANCE (CONTINUED)

Example MY2025:

- A large volume manufacturer has a sale volume of 10,000 light-duty vehicles in Nevada.
- This originates a credit requirement of 2,200 credits (22%, 1,600 of which must be met by credits acquired from ZEV).
- In order to meet the 1,600 credit requirement for ZEV, assuming an average range of 200 miles, the manufacturer will need to sell at least 640 ZEV (BEV or FCEV) vehicles (6.5% of total sales).
- In order to meet the 600 credit requirement for TZEV, assuming an average range of 75 miles, the manufacturer will need to sell 577 TZEV (PHEV) vehicles (approx. 6% of total sales).

This is just an example. Different manufacturers have different path to compliance. And different compliance paths can lead to different actual sale volumes of compliant vehicles.

CREDIT COMPLIANCE – EARLY CREDITS

Early Credits (as well as Initial Proportional Credits) are a way to help vehicle manufacturers with the steep credit requirements of the initial years of a ZEV program (the requirement, for a program that starts in MY2025 goes from 0% to 22%).

Manufacturers can bank credits earned for the sale of ZEV compliant vehicles in Nevada in the years before the beginning of the program. In the case of Nevada, these years could be MY23 and MY24.

Banked credits can then be used starting MY25.

CREDIT COMPLIANCE – INITIAL PROPORTIONAL CREDITS

Initial Proportional Credits are another way to help vehicle manufacturers with the steep credit requirements of the initial years of a ZEV program.

Manufacturers are allowed an initial credit amount that usually is:

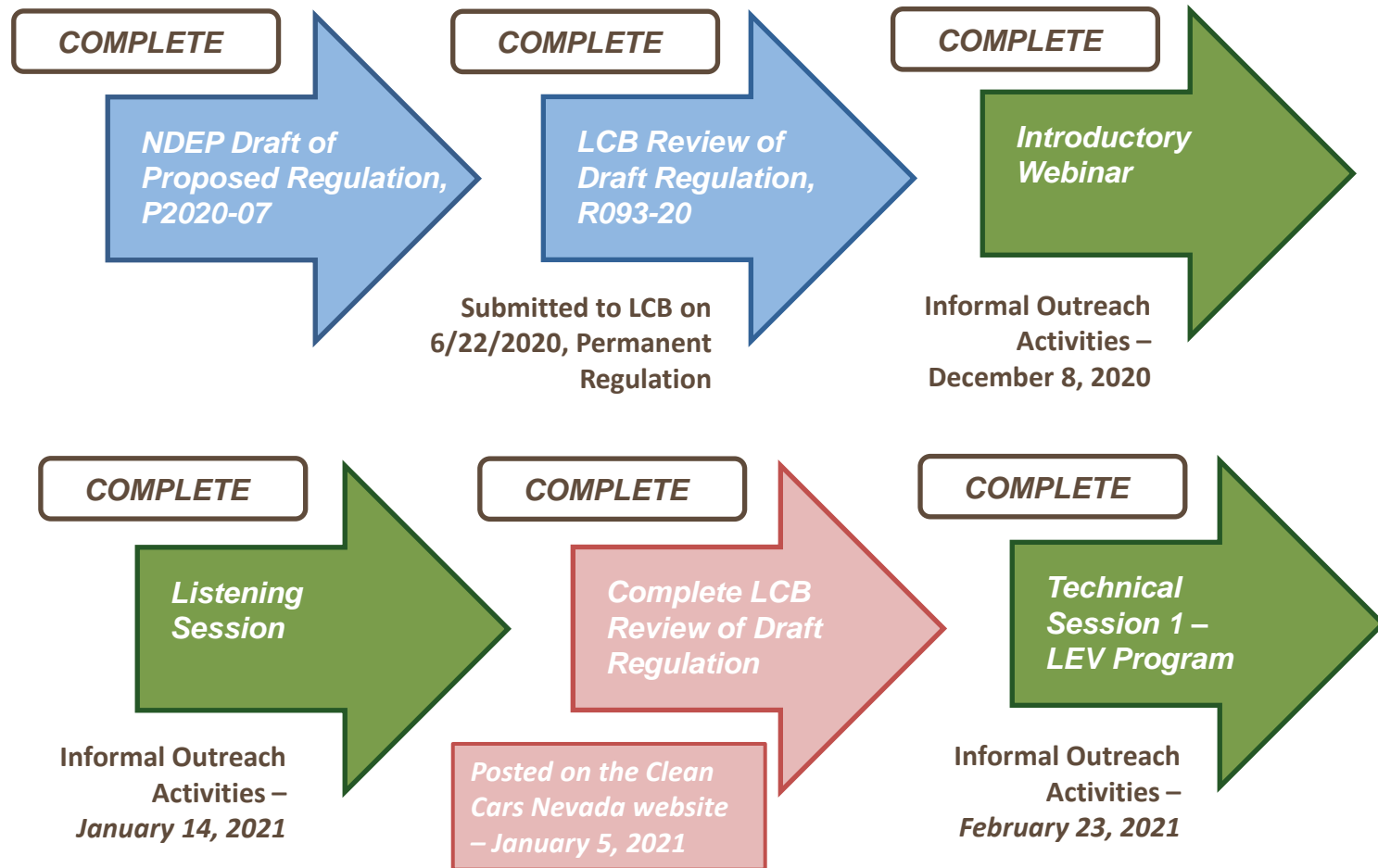
- a) related to the extra credits accrued with the California ZEV program;
- b) modified by a proportionality factor that accounts for the difference in sale volumes between California and Nevada;
- c) possibly, further modified by a percentage that acts as a cap on the total amount of initial proportional credits a manufacturer can start with (e.g., Virginia at 18%).

CREDIT COMPLIANCE – EARLY AND INITIAL PROPORTIONAL CREDITS

Early Credits	Initial Proportional Credits
Directly related to Nevada ZEV sales	Proportionally based on a more mature and understood ZEV market
Manufacturers engage earlier with the ZEV Program	More effective in reducing the compliance uncertainty for manufacturers in the first few years of the program
Earlier and direct impact on air quality	Provides a credit buffer should CA dramatically increase its ZEV % in 2026

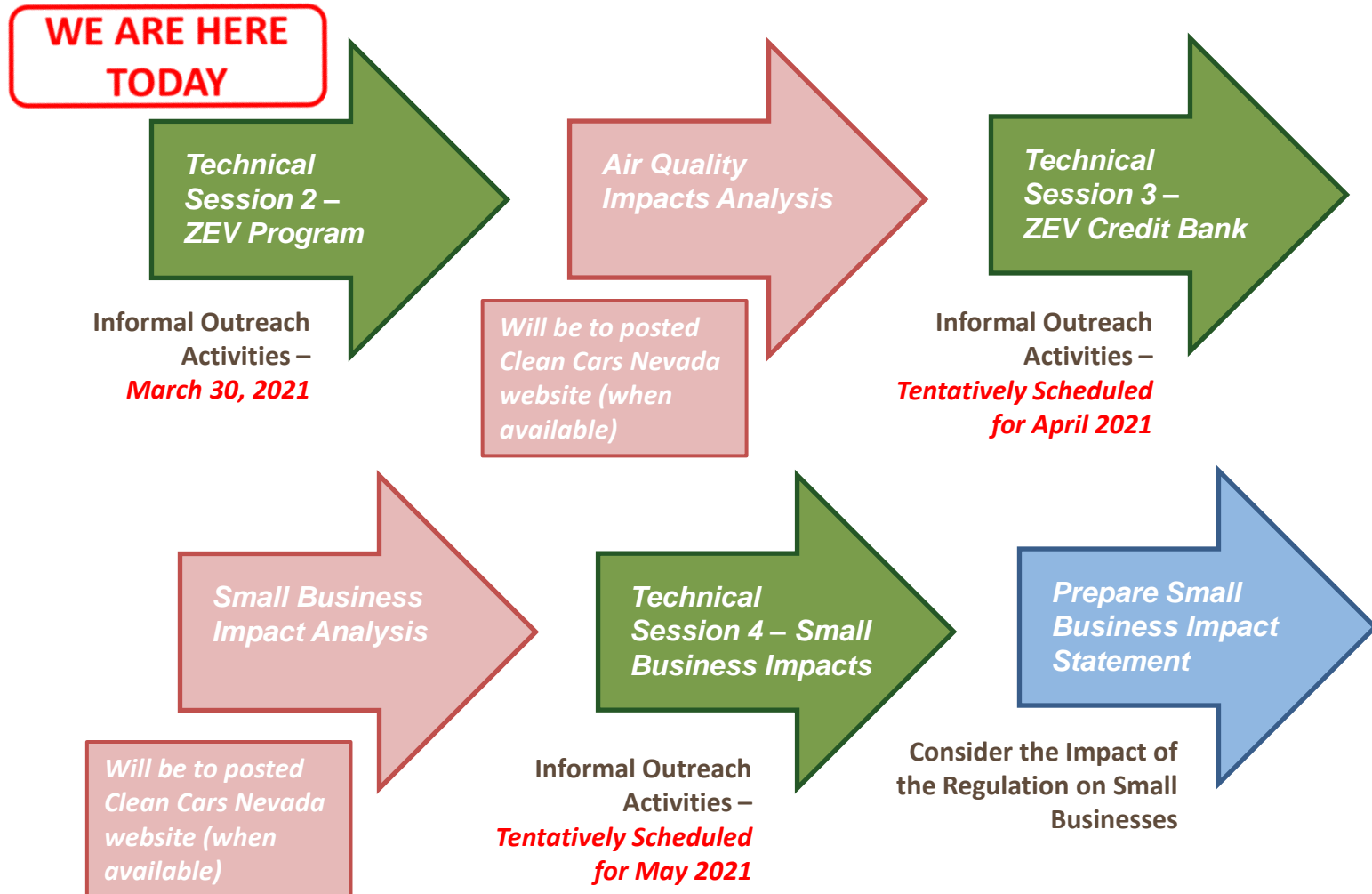
- Early and Initial Proportional Credits are not mutually exclusive.
- We are writing regulation that will take effect in 2024 (MY 2025) and we are expecting the market for electric vehicles to rapidly expand in the next few years.
- NDEP is committed to finding an approach that maximizes air quality benefits but also provides the best strategy for compliance.
- NDEP will take into consideration all information provided by stakeholders and the results from its own analysis (with data from DMV) to propose the most feasible approach (stay tuned!).

THE REGULATORY PROCESS AND OPPORTUNITIES FOR PUBLIC INPUT AND PARTICIPATION

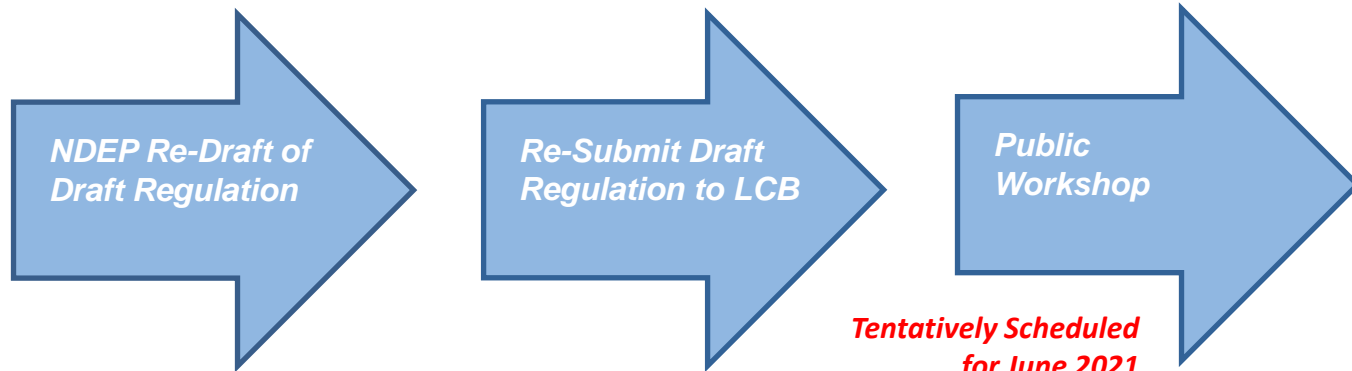


Note: **BLUE** = Regulatory Step; **GREEN** = Informal Activity; and **RED** = Data/Analysis Step

THE REGULATORY PROCESS AND OPPORTUNITIES FOR PUBLIC INPUT AND PARTICIPATION (CONTINUED)



THE REGULATORY PROCESS AND OPPORTUNITIES FOR PUBLIC INPUT AND PARTICIPATION (CONTINUED)



THE REGULATORY PROCESS AND OPPORTUNITIES FOR PUBLIC INPUT AND PARTICIPATION (CONTINUED)



Complete Regulatory Process by End of 2021 for Model Year 2025 Vehicles (Available Sometime in 2024)

WHERE TO FIND OUT MORE



Visit NDEP Clean Cars Website for updates
<http://ndep.nv.gov/air/clean-cars-nevada>



E-mail at CleanCarsNevada@ndep.nv.gov



Sign up for Clean Cars Nevada listserv on NDEP Website

Join a program-specific email list to follow NDEP's regulatory actions and public notices

GET NOTICES >

Select a topic below for program-specific news and updates.

Board for Financing Water Projects

VW Settlement - Nevada Mitigation Fund

Nevada Recycling Program

Nevada Brownfields Program

Air Quality Info and Notices

Nevada Federal DOE Facility Oversight

Environmental Outreach & Education

Clean Cars Nevada

NDEP is posting all public comments received by email or letter on-line

<https://documentviewerpublic.ndep.nv.gov>

An account is required to access the comments, but it can be created right away by signing up.

Once signed in, select the category 'Public Comments For Clean Cars Nevada'

You can then search for public comments by name, organization and submission date



NDEP will be hosting Technical Session 3 – ZEV Credit Bank

Tentatively Scheduled for
April 27, 2021

More details to follow.

Questions?



Contact



Visit NDEP Clean Cars Website for updates
<http://ndep.nv.gov/air/clean-cars-nevada>



E-mail at
CleanCarsNevada@ndep.nv.gov



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