

# Oregon Department of Environmental Quality

## Clean Fuels Program Electricity 2021 Rulemaking

### Rulemaking Advisory Committee Meeting #2: Encouraging New Types of Electric Vehicles

October 8, 2020

# Today's Agenda

- Introductions and Overview
- Discuss Potential new EERs
- Discuss Potential Administrative Approval Process
- Public Comment
- Wrap Up and Next Steps

# Ground Rules

- Honor the agenda
- Provide a balance of speaking time
- Listen to understand and ask questions to clarify
- Respect each other's viewpoints, values and interests
- Focus comments on topics at hand – **be hard on the issues and soft on the people**
- Please stay on mute when not speaking
- Please set your display name to your name and organization
- For questions or comment, **use “Raise Your Hand” button in the Participants panel to get in the queue**; if joined by phone, press \*9 to raise hand
  - When it is your turn to speak, we will call on you
  - Say your name and affiliation before speaking
  - Use the “Chat” feature for help troubleshooting any issues

# Timeline for this Rulemaking

- 5 meetings are scheduled
  - Meeting 1: Feels like 30 years ago
  - Meeting 2: Today
  - Meeting 3: Oct. 22
  - Meeting 4: Nov. 5
  - Meeting 5 (Fiscal discussion): Nov. 19
- Start of public comment period, issuance of Notice of Proposed Rulemaking: mid-December 2020
- Public hearing: mid-January 2021
- End of public comment period: mid-January 2021
- EQC consideration of rulemaking: March/May 2021

# Goals for this Meeting

- Targeted discussion of how we can ensure that new electric vehicles can benefit from the Clean Fuels Program including:
  - adding new EERs to enable new types of EVs to generate credits
  - creating a more streamlined process to do so
- Highlight areas where the agency is soliciting specific feedback, especially where:
  - multiple options are possible
  - there are both pros and cons that should be considered

# The Basics of Energy Economy Ratios

# Energy Economy Ratios

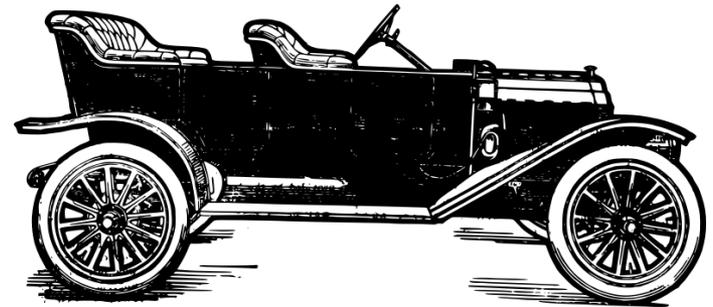
- Energy Economy Ratios (EERs) are how we adjust our credit calculations to account for the higher-efficiency engines in most alternative fuel vehicles.
  - For example, a full battery electric passenger vehicle is 3.4 times more efficient than the gasoline version so the EER is set to 3.4.
  - In other words, an electric passenger vehicle will go 3.4 times farther using the same amount of energy as the gasoline version.
- EERs allow for accurate credit generation from these vehicles

# One to One Comparison

One to One comparison: Comparing energy economy ratings using the same duty cycle testing across the alternative fuel vehicles and equivalent gasoline/diesel engines. For example, when comparing fuel economy results from testing equivalent cars against each other.



100 miles per gasoline gallon-equivalent



29.5 miles per gallon

$$\frac{100}{29.5} = 3.4 \text{ EER}$$

# One to Many Comparison

One to Many comparison: Comparing the energy economy of one mode to another mode(s) on using a different parameter such as equivalent passenger miles on a diesel bus versus a light rail.



100 megajoules per passenger-mile



30.3 megajoules per passenger-mile

$$\frac{100}{30.3} = 3.3 \text{ EER}$$

# OAR 340-253-8010 Table 7

Here are the current electricity-related EERs that are currently approved for use:

Light-Medium Duty Applications		Heavy-Duty/Off-Road Applications	
Fuel-Vehicle Combo	EER value compared to gasoline	Fuel-Vehicle Combo	EER value compared to diesel
BEV or PHEV	3.4	BEV/PHEV	5
Electric Motorcycle	4.4	BEV/PHEV Transit Bus	5
		Electric Light Rail	3.3
		Electric Streetcar	2.1
		Electric Aerial Tram	2.6
		Electric Forklift	3.8
		Electric TRUs	3.4

# Our Thought Process in Establishing New EERs

As previously discussed, the agency is trying to balance the pros and cons with respect to how narrow/broad we establish new EERs...

- With a narrow EER, we have more confidence in the accuracy of the EER since the data will be specific for its stated usage. However, we'll have less data and it might be less accurate to a broader set of users.
- With a broader EER, we will have more generally accurate data – but it may not be as accurate for individual vehicles within that broad category. The following question would be then: At what point do we establish a new EER for a sub-category?

# Considering a New EER

When looking at adding an EER, these are the questions we generally ask ourselves:

- Does it fall within one of the existing EERs in Table 7?
- What is the new vehicle category replacing? Are they replacing a gasoline or diesel vehicle?
- Are these vehicles new since the beginning of the program or did they exist prior to the start of the program?
- What energy data do we have? How much data do we have? How good is the data quality?
- Does something about the new vehicle's operation create additional energy/emissions needs elsewhere?

# Potential New EERs

# Potential New EERs

These two EERs were adopted by the California Air Resources Board during their 2018 Low Carbon Fuel Standards rulemaking. DEQ believes they are appropriate to add to the Oregon Clean Fuels Program now:

Eligible Application	Equipment	Energy Economy Ratio (EER)
<b>Electric Cargo Handling Equipment (eCHE)</b>	Loader	2.7
	Rubber-Tired Gantry Crane (RTG Crane)	
	Rail Mounted Gantry Crane	
	Automated Stacking Crane	
	Side Handler	
	Top Handler	
	Reach Stacker	
	Aerial Lift	
<b>Electric Ocean Going Vessel (eOGV)</b>	Various shore power provided to an ocean going vessel at-berth	2.6

# Airport Ground Service Equipment?

During the last meeting, a stakeholder asked whether we could adopt an EER for electric airport ground service equipment (eGSE).

- First, we ask whether eGSE could fall into any existing category. The most likely would be electric cargo handling equipment (eCHE).
- The definition of eCHE includes: any off-road, self-propelled vehicle or equipment, other than yard trucks, used at a port or intermodal rail yard to lift or move container, bulk, or liquid cargo carried by ship, train, or another vehicle, or used to perform maintenance and repair activities that are routinely scheduled or that are due to predictable process upsets.
- Given this definition, can some airport ground service equipment be included in this category, or applied for in the administrative process?

# Electric Cargo Trikes?

In previous discussions with stakeholders, DEQ was asked whether we could adopt an EER for electric cargo trikes.

- We studied a paper titled “Alternative Vehicles for Last Mile Freight” authored by Cherry, Azad, Rose, and MacArthur.
- John MacArthur is the Sustainable Transportation Program Manager for the Transportation Research and Education Center (TREC) at Portland State University.
- B-Line is a last-mile logistics, distribution and warehousing company based in Portland. They use e-trikes for most of their urban deliveries.
- DEQ continues to work with both TREC and B-Line to determine whether we have adequate data to add in an EER for e-trikes.

# The Process of Adding A New EER

# The Current Process

Currently, the only way to adopt a new EER is through rulemaking.

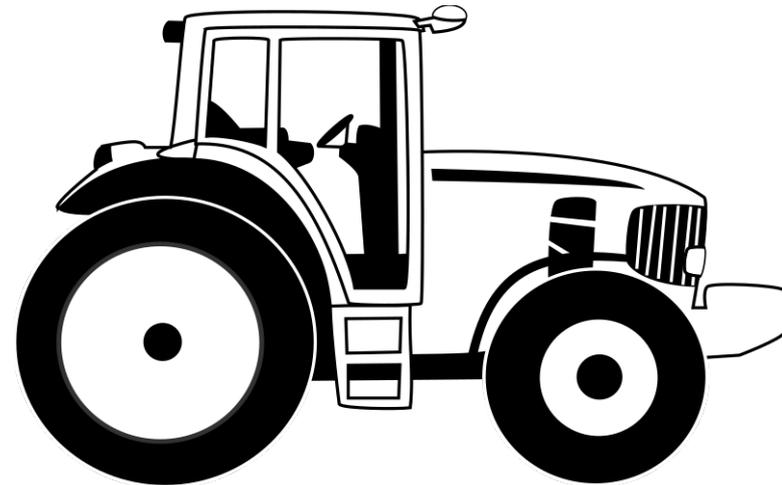
- Rulemaking is a very resource-intensive process.
- As electrification spreads to new vehicle types, there has been an increase of requests to create new EERs.
- Waiting for the next rulemaking delays the full credit generation potential of many of these vehicles.

# Creating an Administrative Process

- Based on discussions with stakeholders, we are proposing to develop an administrative process in order to speed up approval and adoption of new EERs.
- In the discussion paper, we proposed the concept of an EER-adjusted carbon intensity (CI) as a way to do this.
- Along with creating the administrative process, it will be important to develop:
  - standards as to whether adequate data exists to support adoption of a new EER, and
  - methodologies to ensure the comparison is accurate

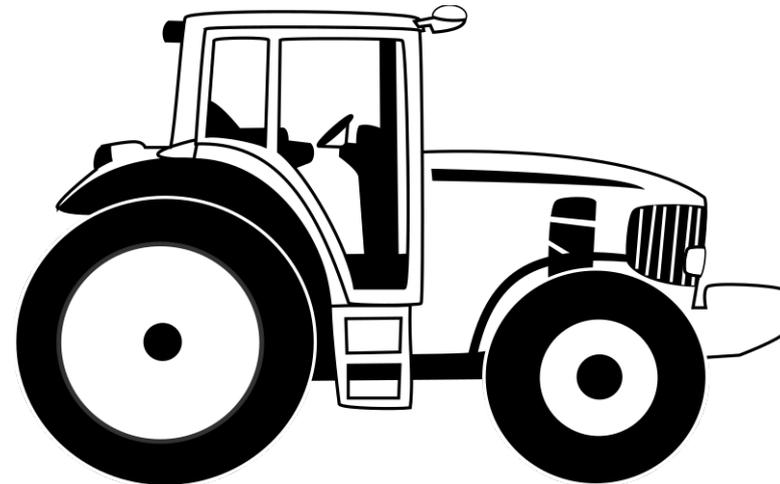
# Application Example #1

- Farmer Bob has a new electric tractor, and uses 6 months of data to apply for an EER-adjusted CI.
- For the displacement baseline he provides the same 6 months of data for a diesel tractor from the year before.
- DEQ uses that data to establish an EER and follows the administrative process to issue it.



# Application Example #1

- Farmer Bob reports the charging for his tractor quarterly and annually provides data that allows DEQ to further refine the energy economy ratio.
- As additional farmers get electric tractors, some may also apply for an EER-adjusted CI.
- DEQ looks at all the data from all the farmers and decides to develop a categorical EER for this fuel/vehicle combination.
- This categorical EER is adopted through rulemaking.



# The Conceptual Process

## The Administrative Process



This is also administrative

Public comment period

Rulemaking



## The Rulemaking Process

# Getting a New EER-adjusted CI Approved – Administrative Process

- Application Received
  - DEQ reviews for completeness.
- Administrative Review
  - DEQ reviews for technical completeness and determines if the conditions are met to consider a new EER.
  - DEQ reviews the data for sufficiency and quality.
  - DEQ proposes an EER-adjusted CI.

# Getting a New EER-adjusted CI Approved – Administrative Process

- Public Comment Period
  - DEQ releases the application materials, its draft review, and the proposed CI and EER values.
  - DEQ's goal with any public comment process is to provide external parties with enough detail to understand and recreate the agency's results.
  - DEQ will work with applicants to ensure that trade secrets are protected when data is put out for public comment.
- Application Approval
  - DEQ reviews any public comments and confers with the applicant to resolve any issues identified.
  - DEQ approves the application.
  - The EER-adjusted CI can only be used by the applicant.

# Discuss: The Administrative Process

- In what cases should a separate category EER be broken out from an existing EER? What is an appropriate threshold?
- How long of a public comment period is sufficient? For rulemaking, a 30 day comment period is required.
- Are there cases that should be reserved for a formal rulemaking process? How do we establish that threshold?

# Ongoing Reporting

- We propose to require ongoing reporting for holders of the EER-adjusted CIs issued under an administrative process.
- The intent of this provision would be to collect ongoing data and determine whether/when the CI needs to be modified.
- This would also potentially support the development of a categorical EER in a future rulemaking if DEQ staff find it is warranted.

# Discuss: Ongoing Reporting

- When should DEQ require an EER to be modified based on ongoing reporting?
- For what period of time should holders of EER-adjusted CIs be required to submit reports?
- Should there be a minimum threshold where holders of EER-adjusted CIs not be required to report?
- Starting in 2022, fuel pathway holders are required to have their annual reports verified by a third party. Should holders of EER-adjusted CIs be treated differently or the same under third party verification rules?

# Discuss: The Rulemaking Process

Moving beyond an EER-specific CI, these are the kinds of questions that DEQ will consider to establish a new categorical EER:

- How quickly should DEQ move to the next step?
  - How many similar applications does DEQ need to have?
  - How many similar vehicles need to be placed in service?
- Should a vehicle manufacturer be allowed to do a joint application with a potential or actual fleet in Oregon? If they do, should that EER-adjusted CI be allowed to be used more broadly by any owners of those vehicles?
- The categorical EER will need to be adopted through a formal rulemaking process.
- Once adopted, the categorical EER can be used by anybody using a vehicle that meets the description of the vehicle category.

# Application Example #2

- Lemon Raven scooter company applies for an EER for their electric scooters.
- They establish a displacement baseline by comparing the energy per mile for a scooter against that of a light duty car.
- In consultations with DEQ, that baseline is rejected in favor of a composite of the energy economy of the modes that its riders would likely have taken otherwise, based on rider surveys.
- DEQ proposes the EER for public comment.



# Application Example #2

- During the public comment process, commenters note that the energy economy of the scooters should include the energy associated with their being picked up for charging.
- DEQ and the applicant work to establish the amount of energy and carbon associated for recharging trips.
- DEQ places the application back out for public comment with that adjustment made.
- With no other comments submitted, DEQ approves the EER-adjusted CI.



# Public Comment Period

Is there anybody from the public that have any additional comments at this time?

# Next Steps

- Next meetings:
  - Oct. 22 – Lowering the Carbon Intensity of Electricity as a Transportation Fuel
  - Nov. 5 – Additional Credit Generation Opportunities
- Comments are generally due 2 weeks prior to meetings in order for us to consider them in the next discussion paper but the sooner the better.
- Please send all written comments to:  
[CFPE2021@deq.state.or.us](mailto:CFPE2021@deq.state.or.us)

**BREAK TIME**

**BREAK TIME**

We'll be back at:

**BREAK TIME**