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Department of Ecology
Climate Pollution Reduction Program
Adam Saul
PO BOX 47600
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Subject: Ultimate Infrastructure Advisors, LLC, Comments on Washington's Clean Fuels Standard Rule Proposal Phase (CR-102): Heavy Duty Fast Charging Infrastructure Crediting

Dear Mr. Saul,

Ultimate Infrastructure Advisors, LLC, (Ultimate Infra) is a strategy and development consulting firm serving primarily electric fleet charging infrastructure developers, including those with sites under development in the State of Washington. The leadership of Ultimate Infra has been an active participant in California's Low Carbon Fuel Standard program and rulemakings since 2012, including specific engagement on the topic of the Heavy Duty Vehicle Fast Charging Incentives (HD-FCI) crediting mechanism.

Ultimate Infra appreciates the opportunity to provide comments to the Department of Ecology on behalf of its clients. Ultimate Infra also recognizes the Department's desire to harmonize the CFS regulation with California's program, to the extent appropriate given the specific considerations in Washington.

Below the comments will address the following key recommended revisions to the proposed rule:

1. HD-FCI Crediting Period Should Be Extended from 5 Years to 10 Years
2. Correct HD-FCI Crediting Formula
3. Allow for Private HD Charging Facilities to Receive HD-FCI
4. Increase Credit Generation Potential for HD-FCI Charging Sites to Stimulate Deployment
5. Specify Multiple on Net Invested Capital for HD-FCI FSE
6. Remove Reduction to 2 Years of Crediting upon Re-application if Fail to Energize within 24 Months of HD-FCI Approval

Context and specific amendment suggestions are provided below for each key recommendation.

HD-FCI Crediting Period Should Be Extended from 5 Years to 10 Years

In WAC 173-424-560 (2)(iii)(c)(vi), the crediting period is stated as five years, whereas CA's recently enacted HD-FCI regulation allows for a 10 year crediting period. Given the stage of maturity for the HDV sector, a 5 year crediting period is unlikely to be able to produce the financial return contemplated by the Department, especially at current WA CFS credit prices. It is also noteworthy that the HD-HRI (Hydrogen Refueling Infrastructure) crediting period is proposed as 15 years.

> (vi) Crediting period. HD-FCI crediting is limited to ~~five~~ ten years starting with the quarter of ecology approval of the application.

Correct HD-FCI Crediting Formula

In WAC 173-424-560 (2)(iii)(e), the formula proposed references and copies the formula for HD-HRI. This needs to be corrected and replaced with similar formulas at CA LCFS.

> (e) Calculation of HD-FCI credits. HD-FCI credits will be calculated using the following equation for each FSE approved under this provision:

$$Credits_{HD-FCI}(MT) = (CI^{XD}_{standard} \times EER - CI_{HD-FCI)\times C_{Elect}\times(Cap_{HD-FCI} \times N \times UT - Elec_{disp})\times C}$$

Where:

$CI^{XD}_{standard}$	is the average carbon intensity standard of diesel (XD = "diesel") for a given year as provided in Table 1 of WAC 173-424-900;
EER	is the dimensionless Energy Economy Ratio for H2/FCV relative to diesel as listed in Table 4 of WAC 173-424-900;
CI_{HRI}	is the carbon intensity used for HRI crediting. Company-wide weighted average CI for dispensed hydrogen during the quarter or 0 g/MJ, whichever is greater;
E_{H2}	is the energy density for hydrogen in MJ/kg as listed in Table 4 of WAC 173-424-900;
Cap_{HRI}	is the HRI refueling capacity for the station (kg/day);
UT	is the uptime multiplier which is the percentage of time that the station is available to refuel a vehicle up to 90 percent of state of charge during the quarter, in a similar manner as reported in SOSS;
$H2_{disp}$	is the quantity of hydrogen dispensed during the quarter (kg);
N	is the number of days during the quarter;
C	is a factor used to convert credits to units of metric tons from gCO_2e and has the value of:

$$C = 1.0 \times 10^{-6} \frac{(MT)}{(gCO_2e)}$$

Allow for Private HD Charging Facilities to Receive HD-FCI

To harmonize WA CFS with CA LCFS, Ecology should amend the proposed rule to allow Private HD Charging Sites, restricted to a single fleet's operations, to receive HD-FCI, but at a lesser percentage "factor." When Ecology corrects WAC 173-424-560 (2)(iii)(e) as noted above, a Private HD-FCI charging site formula can be incorporated, in addition to associated references in the regulation, as required to harmonize.

Increase Credit Generation Potential for HD-FCI Charging Sites to Stimulate Deployment

Given the nascent state of deployment for HD charging infrastructure and the value of WA CFS credits, the HD-FCI mechanism, while helpful, is unlikely to stimulate private capital based on HD-FCI. Under the near term WA CFS pricing environment and proposed HD-FCI constructs, HD-FCI will fail to produce an adequate return on invested capital. As a result, Ultimate Infra proposes to enhance the HD-FCI crediting structure in one or more of the following ways to increase the credit generation potential:

1. Increase the crediting "factor" from 20% for Shared HD Sites to a higher value, e.g., 30% and Private HD Sites from 10% to, e.g., 20%,
2. Increase the maximum threshold for return on invested capital,
3. Maintain and increase an annual discount rate to 18% to reflect the risk profile of HD-FCI in WA given current credit prices,
4. Remove the netting of incentives from the capital expenditure formula that calculates return on invested capital,
5. Allow for the cost of land acquisition and discounted value of rent to be incorporated in the invested capital calculation, and/or
6. Allow for Book and Claim Renewable Energy Credits to augment HD-FCI credit generation values

Specify Multiple on Net Invested Capital for HD-FCI FSE

WAC 173-424-560 (2)(iii)(d)(vii) discusses the methodology for calculating "the estimated cumulative value of HD-FCI credits generated for the FSE"; however, the actual threshold is not stated in the proposed rule. Ultimate Infra recommends that Ecology match or exceed, as noted above, the CA threshold of 150% of capital expenditures. In sub-part (B) of this section, there is a mention of a 10% discount rate. While this is a helpful inclusion, it may be a residual from LD-FCI in the current regulation.

Remove Reduction to 2 Years of Crediting upon Re-application if Fail to Energize within 24 Months of HD-FCI Approval

In WAC 173-424-560 (2)(iii)(d)(vi), the proposed rule states that if an approved application for HD-FCI fails to energize within 24 months of approval, then a subsequent approval for the same HD-FCI facility is permissible, subject to remaining capacity under the 2.5 percent of deficits

cap, but the facility may only claim HD-FCI credits for 2 years. This appears to be a holdover from LD-FCI concepts in CA (and WA). CA's recently enacted HD-FCI regulation is similarly worded, except no reductions in the crediting period for re-applicants exist.

> (vi) The FSE must be operational within 24 months of application approval. If the applicant fails to demonstrate the operability within 24 months of approval and estimated potential HD-ZEV credits exceed two and one-half percent of deficits in the most recent quarter deficit data is available, then the application will be canceled. The applicant can reapply the following quarter for the same FSE site eligible~~ only for two years of crediting~~.

Ultimate Infra appreciates the opportunity to provide comment and offers to discuss its proposals with Ecology staff.

Regards,

David Schlosberg

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Ultimate Infrastructure Advisors, LLC