NATURAL RESOURCES DEFENSE COUNCIL

August 5, 2011

Michelle Buffington
Stationary Source Division
California Air Resources Board
1001 "I" Street
Sacramento, California 95814

Re: Comments on the LCFS Workshop on Proposed Amendments (July 22, 2011)

Dear Mrs. Buffington,

The Natural Resources Defense Council (NRDC) is pleased to provide comments to ARB regarding the proposed regulatory amendments to the LCFS as presented at the July 22, 2011 workshop. We thank ARB staff for their tremendous efforts over the past year to ensure the LCFS is implemented in an effective manner.

We provide recommendations on the following areas covered by the presentation: high carbon-intensity crude oils, certification, land use change, energy-efficiency ratio (EER), and electricity.

1. **NRDC continues to strongly support ARB's efforts to ensure that the California gasoline and diesel baseline does not backslide through increased use of high carbon-intensity crude oils.**

We will continue to work with ARB staff and stakeholders to ensure that the LCFS provisions accomplish the following goals:

- Accurately accounts for potential increases in the gasoline and diesel baselines should the crude oil slate become more carbon-intensive over time
- Provides a signal to upstream producers and refineries to invest in innovative reduction activities to reduce emissions from crude oil sources
- Results in upstream emission practices being "day lighted" and reported
- Provides a leadership example to other jurisdictions
- Treats finished and intermediate product imports equally so that both domestic and foreign producers are held to the same standard.

2. **Certification requirements should require invoices of the types of biomass feedstock(s) and amounts used over time, since these factors could significantly affect the carbon-intensity values.**

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It is unclear whether the proposed certification requirements under Method 2B include the amounts, type, and energy content of feedstock(s) used by a facility over time. These factors could significantly influence the carbon-intensity of the resulting fuel product. We recommend the following regulatory modification to more explicitly capture this information:

> *Invoices covering a period of no less than two years for all forms and sources of energy and any feedstock inputs affecting the carbon intensity consumed in the fuel production process. If special circumstances prevent the submission of invoices covering at least two years, the applicant shall work out an alternative period with the appropriate ARB staff.*

This would potentially capture primary sources of energy (such as natural gas, coal, and biomass) that serve as feedstock inputs into a facility. ARB should also ascertain whether invoices or documentation supporting specific GREET parameters should also be collected.

ARB should also consider encouraging and requiring third-party certification systems to help ensure that facility processes have substantially over time. This approach would be analogous to a public accountant assuring the financial statement and records of a company are accurate.

3. We continue to support ARB undertaking careful analysis of the impact of biofuel production on food consumption and making the extent of this phenomenon very clear.

We strongly support ARB eliminating or significantly reducing any land use change credit for reduced food consumption. It is inappropriate to inadvertently provide a carbon-intensity credit for biofuels by allowing regional or global food consumption to be reduced in the modeling. ARB should work to ensure that modeling account for the likely scenario that policymakers will take measures to hold food consumption unchanged from the reference case scenario.

We refer staff to our May 11, 2011 community letter to ARB on this issue.

4. NRDC recommends changes to the energy efficiency ratio (EER) methodology to improve the estimates going forward. We also request ARB better describe the methodology and process to update the EER.

NRDC recommends that the EER be updated over time to reflect the relative efficiency performance of the **on-road** alternatively fueled fleet relative to the on-road gasoline or diesel fleet being displaced. Currently, the EER updates proposed by ARB are based on a comparison of new model year efficiency performance. However, this approach may inadequately describe the EER performance of the current on-road vehicle stock that will use the majority of the low-carbon fuel as well as the petroleum-based fuels. Technically, an EER that is population weighted to reflect the on-road fleet would capture both the lifecycle GHG emission benefits of current and existing vehicles already on the road.

In addition to improving the overall accuracy, focusing on the **on-road** fleet would likely result in a milder change in the EER over time. Recent announcements to reduce emissions of new cars and trucks sold by MY2016 to 250 grams CO_2e/mile and MY2025 to 163 grams CO_2e/mile could lead to potentially large EER shifts over time if the focus is on the new vehicle fleet alone. ARB's ZEV program as well as the California Energy Commission collects historic and current

California sales of alternative vehicle by model year and type, allowing an EER of the on-road fleet to be established. A simple spreadsheet model would allow this to be VMT weighted as well.

5. If ARB decides to focus on an EER based on new vehicle sales, the model year comparisons should be consistent.

We note that ARB's presentation was suggesting that model year 2011 vehicles would be compared against a model year 2016 vehicle. Instead, we recommend that a model year 2011 Chevy Volt or Nissan LEAF should be compared to the 2011 model year gasoline vehicle as opposed to the MY2016 or MY2020 vehicle standard. A trajectory could be developed instead that would automatically update the values over time. ARB could establish an equation that would update the EER automatically, so that the MY 2016 Volt or LEAF is compared against an equivalent MY2016 gasoline vehicle.

As ARB looks to finalize its regulatory changes, we also recommended that ARB provide a description of the process, frequency, and methodology to update the EER ratios going forward. This will allow for greater certainty in terms of the potential credit value and compliance obligations.

6. NRDC supports ARB's goal of maximizing the number of electricity credits generated and ensuring that credit value leads to increases in the use of low-carbon electricity for the transportation sector. We recommend the following improvements to better reflect those goals.

A. Credit generation should not be limited to "Level II" charging

NRDC supports the staff of goal of maximizing the number of credits generated. Limiting credit generation to a specific level of charging, such as residential "Level II" charging, appears to undercut this goal. We understand that there is some concern among staff that allowing Level I charging to qualify could lead to credit generation from non-EV load. However, that same concern holds true of Level II charging, given that 240V outlets are equally capable of being used for purposes other than EV charging. This concern is properly addressed by CARB's proposed reporting requirements and should not be addressed by CARB's requirements for regulated parties for electricity. Excluding Level I charging fails to address the need to track credits accurately.

Our understanding is that many customers, especially plug-in hybrid electric vehicle drivers, are currently charging on standard "Level I" (110V) outlets, either because it is sufficient for their driving habits or to avoid the cost and inconvenience of installing equipment capable of higher rates of charge. Excluding those kilowatt-hours could drastically reduce the number of credits generated in the electricity sector. Furthermore, it would provide an incentive to charge at levels that increase the possibility of adverse electrical grid impact, particularly if that charging is not

intelligently managed. As noted by the California Public Utilities Commission ("CPUC") staff, utility distribution systems are expected to absorb Level I charging with minimal impacts.[1]

In order to both maximize the number of credits generated and create an incentive to charge at levels that could actually minimize adverse grid impacts, the draft regulations should be altered as follows:
(A) For transportation fuel supplied ~~through Level II electric vehicle (EV) charging equipment~~ to charge plug-in electric vehicles in single and multi-family homes

B. We support CARB staying flexible with respect to initial LCFS metering requirements and recommend staff continue to support efforts to develop lower-cost metering solutions, submetering protocols and standards, and improved measurement over time.

NRDC commends staff for intending to allow for other means of tracking LCFS credit generation before 2015, because many EV customers will not be using separate metering and the costs of separate metering could be greater than the value of LCFS credits associated with such meters. However, the draft regulations stipulate that all electricity credits should be based on "direct metering (also called submetering)" by 2015. This language may cause confusion given the recent CPUC Decision 11-07-029. NRDC recommends the parenthetical reference to "submetering" be removed to resolve CARB's draft regulations with the definitions of metering options included in CPUC Decision 11-07-029. In the terms of that decision, "submetering" is only one form of direct metering and is presently unavailable (at least in terms of a revenue-grade meters as well as utility ownership). We are unclear of CARB's intent here since the only means of metering that could fulfill ARB's "direct metering" requirement by utilities are actually "separate metering," which involves the use of a second utility revenue grade meter in parallel to the primary service meter.

At this early stage of the market, the incremental cost of separate metering cannot be precisely defined. That said, NRDC has good anecdotal information that separate metering results in incremental costs of several hundred, to several thousand dollars, as it requires a second service panel and complicates the installation of charging equipment. As a result, it is quite likely that many electric vehicle drivers will continue to opt for "whole-home" EV rates that do not track EV load separately and would be unable to do so unless they (1) purchase a separate meter or (2) utilize a submeter downstream of the main meter (either separate, in the EV charging unit, or onboard the vehicle itself).

San Diego Gas & Electric ("SDG&E") currently offers a non-tiered time-of-use whole-home EV rate. Southern California Edison ("SCE") and Pacific Gas & Electric ("PG&E") offer tiered time-of-use whole-home rates currently, but anticipate offering non-tiered versions by early 2012. Many customers will likely find these whole-home EV rates to be the most economical option. Before imposing requirements that would disallow credit generation from EV load serviced under such rates, CARB should be satisfied that lower cost direct metering options are widely available. NRDC recommends that CARB staff participate in the sub-metering protocol

[1] Energy Division, *Revenue Allocation and Rate Design*, September 10, 2010, p. 12.

created by CPUC Decision 11-07-029, as it is intended to foster lower cost metering solutions. However, CARB should remain aware that the goal of that protocol, to create "utility revenue-grade" sub-metering, may be more burdensome than what is necessary to track electricity consumption for LCFS purposes.

C. NRDC supports the requirement that utilities offer their customers rates which are appropriate for electric vehicles. However, CARB should define this requirement to include all appropriate rate options

The draft regulations would require utilities to provide customers with "EV time-of-use pricing as a rate option *that includes a discount for off-peak charging.[italics added]"* As a preliminary matter, confusion about the word "discount" should be resolved. "Discount" could mean either a decrease relative to on-peak periods, or imply some type of subsidy relative to non-EV rates. The CPUC has provided no signal that EV rates will be subsidized. EV rates will likely reflect the same cost-of-service rate design principles that apply to other end-uses. Accordingly, off-peak prices under such rates will not return LCFS credit value to those charging electric vehicles. In sub-section (E), NRDC recommends a third requirement meant to ensure this goal of providing a LCFS "discount" is met.

In order to resolve confusion surrounding the word "discount" and not preclude the most efficient rate designs, the draft regulation rate requirement should be revised as follows:

> ~~*Provide EV time-of-use pricing as a rate option that includes a discount for off-peak charging*~~
> *Provide customers with rate options that encourage charging behavior that minimizes economic, social, and environmental costs and maximizes economic, social, and environmental benefits*

Again, NRDC supports the staff goal of requiring utilities to provide rates that are designed with electric vehicles in mind. However, the requirement should not be restricted to those utility rates with the moniker "EV rate," but should include all rates that will minimize the costs and maximize the benefits of electric vehicle charging. As explained above, such rates will not be limited to separately metered EV rates, and will include "whole-home" EV rates as well. Whole-home EV time-of-use rates are likely to be functionally equivalent to general time-of-use rates. In addition, the draft regulations should be revised to reflect the fact that "time-of-use" rates are only one type of time-variant rate which could be used in the EV context. "Time-of-use" is a term of art referring to rates that have pre-determined prices for various periods of the day (e.g. "on-peak," "partial-peak," "off-peak," "super-off-peak"). Other forms of rate design, including dynamic pricing or hourly pricing, could prove more efficient in the EV context. In fact, analysis done by the Electric Power Research Institute and MidAmerican Energy for the Illinois Commerce Commission suggests that time-of-use rates could result in artificial load spikes at the beginning of off-peak periods.[2]

CARB may wish to consult with the CPUC to determine which utility rates meet this requirement.

[2] MidAmerican Energy, *Initial Assessment of the System Impact of Plug-in Electric* Vehicles, 2010, p.18.

D. To further the goals of the LCFS, credit value should be returned to customers charging plug-in electric vehicles

NRDC supports the key staff goal of returning credit value to those charging plug-in electric vehicles. Without them, no credits would be generated. Returning credit value to those customers not only reflects this fact, but creates additional incentives for Californians to use electricity as a transportation fuel. NRDC supports the intent of the draft regulations to ensure that value is returned to customers by requiring utilities to provide electric vehicle rate options and online tools to help customers choose the best rate option. However, as explained above, these requirements alone will not fulfill the goals of retuning credit value to electric vehicle customers and increasing the use of alternative fuels. A third requirement should be included which more squarely addresses these goals. The draft regulation should be revised accordingly:

In order to receive credit for electricity supplied as a transportation fuel, the Utility Distribution Company must:

1. Return credit value to customers charging plug-in electric vehicles to incentivize the switch from conventional gasoline and diesel to lower carbon intensity electricity;

Such a requirement returns credit value to those, without whom, no credits would exist and furthers the goal of increasing the use of alternative fuels. It should be noted that, given the CPUC's determination that third-party charging service companies will largely be utility customers, they too would benefit from a requirement that utilities return credit value to those customers charging electric vehicles. Other customers such as commercial or workplace customers helping their customers or employees charge their vehicles would also benefit. The above-suggested language is worded to ensure that all customers charging plug-in electric vehicles, including third-party charging service providers, would receive the value derived from the sale of LCFS credits allocated to utilities.

E. NRDC supports the requirement for web-based rate tools, but it should be modified to better reflect the core customer service obligations of utilities

NRDC supports the requirement that utilities provide web-based tools to assist customers in choosing between rate options, but such a requirement does not alone reflect the customer service obligations of a utility, nor does it fulfill the staff goal of returning credit value to electric vehicle customers. All utilities should be prepared to answer the question: "Which rate is best for me?" This is true for all customers, and is not limited to EV drivers.

Answering that question will likely require the use of simple spreadsheet tools, such as the Excel spreadsheet currently available for download on PG&E's website. Making such spreadsheets or other simple tools available online as a precondition for LCFS credit generation is not an unreasonable requirement. Both PG&E and SCE currently provide such services online. As demonstrated by PG&E's spreadsheet, online tools need not be extremely complicated. While

SDG&E does not yet have such an online calculator, their customer service representatives offer customers personalized analysis, as do the representatives of PG&E and SCE.
Providing such personalized analysis is a key element in fulfilling a utility's customer service obligations. The California Public Utilities Commission has made it clear that servicing electric vehicle load and preparing customers for electric vehicles is an essential utility function, stating that:

> *Each utility has an obligation to use funds to provide its customers with information regarding the choices available for metering arrangements, rates, demand response programs, charging equipment, installation, safety, reliability, and off-peak charging.*[3]

Online rate tools, while necessary, are alone insufficient to meet a utility's customer service obligations. Many customers may not be comfortable with such tools and will likely rely on real-time communication with utility customer service representatives to determine which rate suit them best. Customers will expect, and should be able to receive answers that are specific to their situations. Accordingly, the draft regulations should be revised as follows

> ~~*Provide a web-based user-friendly tool that allows EV customers to compare rate structure options and provides examples of one or more typical EV households.*~~ *Provide customers with resources, including user-friendly web-based tools and personalized analysis that allows customers to compare rate options.*

Such a requirement is reasonable because it simply reflects the core customer service obligations of utilities. It does not, however, return LCFS credit value to customers charging electric vehicles. In other words, it is insufficient to meet a core staff goal for LCFS credits in the electricity sector.

F. NRDC supports CARB's intention to require that certain conditions be met before credits are allocated in the electricity sector

The staff's proposed rate option and online tool requirements and NRDC's additional suggested requirement that credit value be returned to customers are reasonable conditions to impose upon utilities that choose to become regulated parties in order to receive LCFS credits. Electricity providers are exempted from the LCFS. Their decision to become a regulated party is entirely voluntary and is premised upon the desire to secure value for their customers. In exchange, it is reasonable to expect that such providers actually return that value to customers, while offering rates that will maximize benefits and minimize costs, as well as the resources necessary to chose amongst such rate options. These three simple requirements will further California's goals for reducing emissions in the transportation sector, as expressed in the both LCFS and AB 32.

G. Complete Recommended Changes:

(A) For transportation fuel supplied ~~*through Level II electric vehicle (EV) charging equipment*~~ *to charge plug-in electric vehicles in single and multi-family homes, the Utility*

Distribution Company (as defined by the California Public Utilities Commission as an entity that provides regulated services to customers) is the regulated party in their defined utility territory. In order to receive credit for electricity supplied as a transportation fuel, the Utility Distribution Company must:
1. Return credit value to customers charging plug-in electric vehicles to incentivize the switch from conventional gasoline and diesel to lower carbon intensity electricity;

~~*1. Provide EV time-of-use pricing as a rate option that includes a discount for off-peak charging, and*~~

2. Provide customers with rate options that encourage charging behavior that minimizes economic, social, and environmental costs and maximizes economic, social, and environmental benefits

~~*2. Provide a web-based user-friendly tool that allows EV customers to compare rate structure options and provides examples of one or more typical EV households.*~~

3.Provide customers with resources, including user-friendly web-based tools and personalized analysis that allows customers to compare rate options.

We thank ARB staff and management for their time and consideration of these comments.

Sincerely,

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