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California Energy Commission
Dockets Office, MS-4
RE: Docket No. 11-IEP-1L
1516 Ninth Street
Sacramento, CA 95814-5512

Sent VIA Email docket@energy.state.ca.us

CC: VIA Email gstrecke@energy.state.ca.us

Re: Valero Energy Corporation Comments on the 2011 Integrated Energy Policy Report (IPER) – LCFS Analysis Docket No. 11-IEP-1L

Commissioners,

Valero is submitting the following comments on the 2011 IEPR LCFS Analysis. The notice for the public workshop on November 14, 2011 specifically asked for comments on seven items. Valero's comments address these seven items and the staff presentations on "Perspective & Context of Historical Demand and Alternative Fuels", "Federal Renewable Fuels Standard (RFS2) Proportional Share Analysis & Implications" and "Low Carbon Fuel Standard (LCFS) Analysis & Compliance Costs". We also have some general overall comments. Please note that Valero is not only one of the largest independent refiners in America operating two refineries in California, we are also one of the largest ethanol producers in the United States. In addition our renewable fuels division has an interest in alternative fuels, including a cellulosic ethanol plant and a renewable diesel plant progressing toward or already under construction.

Executive Summary

In both the draft IPER and the LCFS Analysis, staff has done an excellent job in pointing out all of the issues that require economically workable and practicable solution in order for the federal RFS2 regulation volumes or the EIA projected cellulosic biofuel volumes to be achieved, let alone the LCFS requirements. While there are reasonable compliance scenarios for the next several years, it is clear that future compliance is not guaranteed. This caution and a commitment to revisit the RFS2 and LCFS compliance issues on an annual basis need to be part of the IEPR report.

Comments on Seven Items in the November 14, 2011 Workshop Notice

1. How important are cellulosic fuels to obligated parties under the LCFS in terms of portion of overall credits needed for compliance?

- Cellulosic fuels are critical to LCFS compliance. As the LCFS gasoline target decreases, corn ethanol then sugarcane ethanol will not have a low enough CI to meet the standard or offset the CARBOB deficit. Brazilian sugarcane ethanol will be limited by export and import logistics and internal demand in Brazil. Cellulosic gasoline and diesel and drop in biofuels (except for renewable diesel) will be available in commercial quantities after cellulosic ethanol is available in commercial quantities. These fuels are also expected to be more expensive than cellulosic ethanol.

The RFS2 provision that allows federal mandated use levels to be lowered, if supplies are inadequate has been utilized for the last three years. Is it reasonable to assume that this practice will continue?

- The RFS2 cellulosic and advanced biofuel volumes were arbitrary picked by congress. They should be viewed as potential goals, not realistically achievable production projections. The EIA cellulosic ethanol projections are much more realistic. Assuming the EIA projections are met (which is not a given), the EPA will be issuing cellulosic waivers and lowering the cellulosic volume requirements for the foreseeable future.

If so, is it reasonable to assume that the other advanced fuels category should not be increased as compensation for reducing the cellulosic target levels?

- The EPA does not have the authority to increase the advanced biofuel volume requirements. They do however have the authority to decrease the advanced biofuel standard and the total renewable fuel standard by the same amount as the cellulosic biofuel standard is lowered. In the past they have not lowered these other standards stating that there was enough biodiesel and sugarcane ethanol from Brazil to comply. In the future 2013+, the advanced biofuel volume requirements will exceed the available biodiesel and reasonable Brazil sugarcane ethanol availability. As such the EPA will have to lower these standards when they lower the cellulosic standard. This is why Valero requested that this scenario be considered, with Commissioner Boyd agreeing at a previous workshop to include this option in the final IEPR report.

2. The LCFS scenario analysis conducted by Energy Commission staff indicates significant use of imported and advanced biofuels over the next several years. How realistic are these projections, especially for ethanol from Brazil and Caribbean Basin Initiative countries?

- Brazilian sugarcane is the only advanced biofuel available over the next several years. Export and import limitations in Brazil and the U.S., Brazilian market demand and the volume of anhydrous ethanol and dehydration capacity in CBI countries will limit imports to the U.S. Staff needs to make sure these limits based on past volumes are not exceeded in any compliance scenario.

When will commercial-scale advanced biofuel production projects come on line in California, how much biofuel will be produced, how much investment capital will be needed, and how can government incentives or other actions stimulate private investment in these projects?

- Commercial-scale advanced biofuel projects will be built where the feedstocks are, not necessarily in California. The rate of increase of cellulosic gasoline and cellulosic diesel in the EIA forecast is a good estimate of a potential, but not a guaranteed built out rate. However, as no commercial advanced biofuel plants are under construction, other than a cellulosic ethanol plant in Iowa and a renewable diesel plant in Louisiana, the EIA cellulosic gasoline and cellulosic diesel projected volumes need to be moved back 2 to 3 years. Investment capital requirements will be large and the capital required for cellulosic ethanol is \$6 per annual gallon of capacity.
3. The ongoing analyses of LCFS scenarios by Energy Commission staff incorporate costs for biofuels that may deter the accumulation of large quantities of excess LCFS credits. Are the cost ranges used in the analysis reasonable for both the biofuel values and the LCFS carbon intensity premiums?
- The current production and capital recovery costs of cellulosic ethanol are \$1.80 per gallon higher than corn based ethanol. The current production and capital recovery costs of biodiesel are \$2.20 per gallon higher than ULSD. The current production and capital recovery costs of renewable diesel are \$1.40 per gallon higher than ULSD. Cellulosic gasoline and cellulosic diesel are anticipated to be higher than these costs. The LCFS carbon intensity premiums or market CI values need to rise to the level necessary to offset the incremental production and capital recovery cost that is setting the market for that year. The highest cost fuel on a CI basis needed for overall market compliance will set the market clearing CI value. If CI values do not rise to above the incremental production and capital recovery costs, then producers will not produce these fuels. However, when LCFS credits are tight, the market CI value will rise above the level needed to offset the incremental production and capital recovery costs and carry a premium. As soon as sugarcane ethanol from Brazil is required for overall LCFS compliance, we would expect the CI values to carry a premium.

How might these biofuel costs change over time, especially for cellulosic fuels?

- The capital recovery cost should decrease some however, as compliance gets harder to achieve, market CI values of LCFS credits should increase in price.

What is the potential consequence for ethanol prices if the excise tax credit and the import tariff are allowed to expire at the end of 2011?

- For the excise tax credit: Producers add the tax credit to the price they charge for their ethanol, when the ethanol price, less the tax credit, is below the value of CARBOB. Thus there should be no impact. When the ethanol price, less the tax credit, is above the price of CARBOB then the price should come down to a price

equal to CARBOB. These prices are before applying any RFS2 RIN value of LCFS CI values. For the import tariff: the above price actions of the excise tax apply plus the landed price should drop by the tariff. However, the netback to the producer always needs to be high enough so they either breakeven in a long market or make more by exporting in a balanced or short market. Basically you need to start with a price forecast for CARBOB, CARB Diesel, corn based ethanol and Brazilian ethanol and then apply the impacts of the tax and tariff changes.

How would the presence of an LCFS credit trading platform that provides market-clearing price transparency be beneficial to obligated parties and prospective advanced biofuel producers and producers and investors?

- It would be helpful but as several EPA fuel credit programs have shown, it is not mandatory. Credit brokers put buyers and sellers together. Price quoting services can also perform this function.
4. The Energy Commission has assumed that all electricity use in the transportation sector will generate LCFS credits that will be available for purchase by obligated parties. Is it reasonable to assume that all of this electricity demand from transit use (such as Bay Area Rapid Transit), home and public charging of electric vehicles will ultimately be quantified and registered for use in the LCFS Program?
- Staff should base its assumptions on the structure of the proposed regulatory amendments. Changes to incorporate electricity for rapid transit or home charging (Level 1) without dedicated meters should not be included for at least 2015 or later allowing ARB to propose and implement additional changes to the regulations.

Is the Energy Commission staff's assumption of compliance with California's Zero Emission Vehicle (ZEV) program reasonable?

- No. Staff should base compliance on past program history of the (ZEV) program.

If not, should a different estimate of electric vehicles be assumed and, if so, based on what rationale?

- Sales projections will remain very low until the costs are close to non electric vehicles. The majority of buyers do not have an additional \$10,000+ to spend on a car. In addition, future electricity cost increases of 30+% due to the Renewable Electricity Standard (RES) should be used in any economic analysis.
5. Is the significant growth in E85 demand necessitated by proportional share compliance with the federal RFS2 standards an unrealistic forecast outlook due to fueling infrastructure challenges and potential decline of flexible fuel vehicle availability? Is it reasonable for the lower cellulosic biofuel forecast developed by the U.S. Energy Information Administration to be used by the Energy Commission staff as one of the underlying assumptions of the LCFS analysis?
- Yes. Staff should use the EIA forecast, and have a case with advanced and total renewable fuel volumes reduced in 2013+, when the cellulosic volumes are

reduced. In addition, staff should also have a case that assumes either waivers are issued by the EPA or Congress revises the RFS2 to lower the volumes to keep the overall pool ethanol percentage at 10% until 2020 and then raise it to 15% assuming that all pre 2001 model year cars are no longer in the in use fleet. Until an economical solution to the E85 or E15 infrastructure issue is identified, any projection with significant levels of E85 beyond 10% of the total gasoline pool fuel demand are unrealistic.

Will the anticipated increase use of more expensive lower carbon intensity ethanol in California to meet the LCFS reduce the ability of E85 to be priced low enough to overcome the fuel economy penalty?

- Yes, but it depends on your forecast for ethanol and CARBOB prices.

If so, is it possible that other revenue streams from the sale of LCFS credits or RINs could be sufficient to help offset any rise in ethanol costs relative to gasoline?

- Yes, but it depends on your forecast for ethanol and CARBOB prices. For instance, today biodiesel costs more than ULSD but the 1.5 biodiesel RINs per gallon of biodiesel at the current market price for biodiesel RINs makes blending biodiesel possible.

6. Under what circumstances and to what extent can the growth of natural gas fuel use in vehicles significantly displace diesel use in medium and heavy duty vehicles?

- Natural gas use in medium and heavy duty vehicles will be limited to local fleets with central fueling locations. Fleets that move across or out of the state will not switch to natural gas until fueling stations at truck stops are numerous. However, these fueling sites will not be put in until the natural gas vehicles are there. The classic Catch-22 with no economical solution.

7. To what extent can existing or restructured government regulations (such as air district fleet rules or CPUC regulations) and programs (such as Clean Fuel Outlet, AB 118, AB 32 Cap and Trade, Proposition 1B, and Carl Moyer) increase the development and use of alternative fuels and vehicles in California?

- Regulatory mandates historically have been shown to create high cost artificial markets that are not sustainable.

Comments on Perspective & Context of Historical Demand and Alternative Fuels Presentation

Non-Conventional Vehicle Trends (slide 10)

Since the majority of compressed natural gas vehicles were for fleets, the growth rate of this segment is likely to fall in the future as the fleet market becomes saturated. Electric vehicle growth may continue as a novelty for those that can afford the price premium. However, the price premium and expected 30% increase in electricity costs with the RES will keep future sales low.

Heavy Duty AFV Trend (slide 12)

Since the majority of these vehicles were for fleet with central fueling locations, future growth is likely to fall as the fleet market becomes saturated.

Alternative fuel Vehicle projections (numerous slides)

Based on above two comments, we believe the staffs forecast of gasoline vehicles are too low, and alternative fuel vehicles (electric, natural gas, propane,) are too high.

E85 Stations Past and Projected

Given the ownership structure and high installation cost of E85 pumps, the forecast for the number of E85 stations is too aggressive.

Infrastructure Cost (slides 24 and 25)

Although staff pointed out the logarithmic scale, these slides remain misleading and should be switched to an arithmetic scale on the Y axis.

ARB Scenarios Incremental Cost Matrix (slide 32)

A more enlightening slide would be the total transportation fuel sector cost to California due to RFS2, alternative vehicle costs, alternative fuel, fuel infrastructure costs, AB-32 refinery and transportation fuel allowance costs.

Comments on Federal Renewable Fuels Standard (RFS2) Proportional Share Analysis & Implications Presentation**Renewable Fuels Standard (RFS2) – Revised (slide 6)**

As stated above, Valero does not believe that the U.S. EPA will continue to issue a cellulosic waiver and not also lower the Total Advanced Biofuel and the Total Renewable Fuel requirements by a like amount in 2013 and beyond. This is because, as the chart on slide 6 shows, if this is not done, then the amount of other advanced biofuel is over 1 billion gallons. It is not reasonable for this volume to be met only by biodiesel and Brazilian sugarcane ethanol, which currently are the only two available advanced biofuels. Commissioner Boyd agreed at the IPER review workshop on September 9th that this approach would be included as an alternative case in the final IPER.

Revised EIA Cellulosic Biofuel Target Volumes (slide 10)

Valero believes that the EIA Cellulosic Diesel, Cellulosic gasoline and other advanced biofuel projections are too high and should also be moved back in time. Currently the EPA EMTS system still shows no cellulosic biofuel or cellulosic diesel volumes. In addition, this year prior to July when the advanced RIN price made importing Brazilian ethanol economical, the number of gallons of advanced biofuels averaged only 4.4 million gallons per month or 52.8 million gallons per year. Some of this could have been sugarcane ethanol and some was related to biomass combustion at ethanol plants and not drop in fuels. Valero believes the CEC should also run an alternative case that uses a lower cellulosic diesel, cellulosic gasoline and other advanced

biofuel volumes along with the above mentioned alternative case reduction in advanced and total renewable fuel volumes equal to the cellulosic waiver reduction.

E85 Issues (slides 18 – 24)

The staff has done a very good job of pointing out all of the issues with increased E85 use. Valero believes another alternative case where E85 vehicle growth and infrastructure build out remains at historical growth rates would be very informative. This case represents the federal RFS2 program not working and the U.S. EPA or Congress lowering the volumes required to economically feasible levels based on vehicle warranty and infrastructure limitations, and consumer preferences and economics. Until all of the blend wall issues have an economical solution, even if the capital is available to build all of the cellulosic and advanced biofuel, there will be no place to put it or vehicles to consume it. This case should also be used in the LFCS feasibility analysis.

Comments on Low Carbon Fuel Standard (LCFS) Analysis & Compliance Costs Presentation

LCFS Compliance Analysis (slide 2)

Staff selection of the three cases does a good job of framing the range of possibilities. However, Valero would like to see four additional cases. One with California receiving 20% of the EIA projected alternative fuel volumes. This case represents California's share if other regions adopt an LCFS. A case with historical growth rate of E85 vehicles and infrastructure growth instead of any proportional share. This is the "even the RFS2 is not doable" case. The other two cases correspond to two alternative cases that Valero has asked for. A case with EIA projections, but a reduction in the total advanced fuel and total renewable fuel volumes equal to the reduction in the cellulosic volumes from the RFS2 volumes to EIA's projections. The previous case with EIA projections for cellulosic diesel, cellulosic gasoline and other advanced biofuels adjusted lower and later in time.

LCFS Analysis – Common Assumptions (slide 3)

Valero recommends staff adjust the number of credits generated in 2011 downward by 75% due to the impact of refiners running HCICO in 2011. With ARB's proposed Regulatory Amendments, we believe there will be no need for an adjustment in 2012.

LCFS & RFS2 Estimated Cost Comparison (slide 21)

Valero believes that it would be beneficial and informative for staff to estimate the total cost of all climate change programs to the CA consumer as cents per gallon and an annual cost. The cost should include the costs of RFS2, LCFS, and cap and trade CO2 Allowances under AB 32 for the refining sector (stationary and transportation fuel emissions), alternative fuel infrastructure costs (E85 and hydrogen) and alternative fuel vehicle costs. California consumers need to know just how much all of the climate change regulations will cost them.

These issues need a lot more work and study by the CEC. We strongly recommend additional careful analysis to ensure that actions taken in California do not negatively impact California jobs, consumers or a delicately balanced transportation fuel market. Your work in this area is appreciated.

Sincerely,

A handwritten signature in black ink, reading "John R. Braeutigam". The signature is fluid and cursive, with a long horizontal line extending from the end of the name.

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