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California Air Resources Board
1001 I Street
Sacramento, CA

Re: BP West Coast Products, LLC Comments on the Clean Fuels Outlet Regulation for public hearing at the January 26-27 CARB Board Meeting

Dear Chairwoman Nichols and board members:

The proposed amendment to the Clean Fuels Outlet regulation (CFO)is a legally tenuous, heavy-handed, fundamentally flawed attempt to direct private investment in the most inappropriate and unjustified manner. The regulation and proposed amendments compel private companies to invest hundreds of millions of dollars in infrastructure to manufacture, distribute and sell a product that they do not currently produce and, based on all evidence thus far, consumers are unwilling to buy. Ostensibly, the CFO is designed to promote zero emission vehicles in furtherance of California environmental policy. Yet, the facts clearly show that hydrogen fuels and vehicles are high cost options and not zero carbon. Forcing private companies to invest in high cost infrastructure that may not be used does nothing to advance the environmental interests of California. Accordingly, CARB should reject this proposal as fundamentally flawed public policy.

BP recently celebrated 100 years in business and we plan to be in the business of selling transport fuels for the next hundred years. To be successful in the long run, our products have to be increasingly sustainable, lower in carbon and ultimately accepted by consumers without subsidy. To that end, we are constantly looking at the future of all transport fuels – with a short, mid and long term investment horizon.

BP was one of the largest investors in hydrogen fueling research, demonstration and infrastructure build-out. We have built, in partnership with others, 15 hydrogen fueling sites around the world. Five of those sites have been in California. The most recent one - the so-called SMUD site along highway 50 – was built for renewable generation of hydrogen. That site is now closed for lack of use.

BP has extensive experience in siting, constructing and operating hydrogen fueling stations. In additional to our global research and siting experience, we actively participated in the California Fuel Cell Partnership for six years. Our detailed research and experience has led us to the conclusion that hydrogen for transport will not be a viable transportation pathway in the long term, if

ever. BP is instead focusing on what we believe to be more viable pathways – including advanced low carbon biofuels used in highly efficient conventional engines and vehicle hybridization.

"In order to get significant [hydrogen fuel] deployment, you need four significant technological breakthroughs.... If you need four miracles that's unlikely: saints only need three miracles". Dr. Stephen Chu, US Secretary of Energy, Interview with MIT's Technology Review, May 14, 2009.

There are many barriers to the hydrogen future as alluded to by Secretary Chu. First, on a well to wheels (WtW) basis, hydrogen fuel has a higher carbon footprint than electric vehicles and hybrid vehicles since the fuel would likely be reformed from natural gas. Despite the renewable hydrogen requirements of SB1505, there is no certainty that renewable hydrogen will be available is sufficient quantities, or at a reasonable price, during the period covered by this regulation.

Second, the extremely high costs of the hydrogen vehicle's fuel cell and storage tank make vehicle costs prohibitive. BP estimates that the current cost of an FVC is about $180,000 (for a 60kW fuel cell module). Moreover, BP sees little prospect for significant technology cost reductions gleaned from learning that accompany "doublings" of manufacturing capacity. In order to achieve the Department of Energy's fantasy cost target of $51 per kW (at production of 500,000 units), there would need to be 18 "doublings" of capacity via production of over 6 million FVCs, with an extremely aggressive and unlikely experience curve factor of 80%. BP estimates that the subsidies required to manufacture the first one million FVCs will range between 29 and 67 billion dollars, far greater than the approximately 14-16 billion dollars in subsidies required to produce electric vehicles.

Finally, BP does not believe that anticipated hydrogen fuel cost savings will offset the higher fixed costs of making a FCV. Assuming natural gas prices at $4.00 per mmbtu and other costs associated with the hydrogen production and fuelling infrastructure, we estimate the cost of hydrogen would be between $5 and $7 per kg, A kilogram of hydrogen in energy terms is equivalent to one gallon of gasoline. Therefore, unlike hybrid and plug-in hybrid vehicles where the cost of fuel is lower than for a conventional gasoline vehicle, for a fuel cell vehicle the cost of fuel will be higher than a conventional gasoline vehicle. Therefore an FCV user won't have a chance to recoup some or all of the higher vehicle cost through lower fuel costs.

Our decision to exit the hydrogen for transport business was made at the highest levels of the company and supported by significant on-the-ground experience and research. At the time we exited the business, BP's hydrogen efforts exceeded the efforts of all other energy corporations in the U.S. combined. Furthermore, we are not aware of any company that invested more in California hydrogen fueling at the time of our exit.

We believe it is extremely perilous for policymakers, including CARB, to believe that they can pick and choose technology winners and losers better than the open marketplace – and to compel private investment in fledgling, unproven technology. Policymakers do not have a good track record for picking winners and losers in technology or fuels. CARB has seemingly understood this concept in their design and promotion of the LCFS. CARB members have touted the LCFS as performance based and fuel neutral. For all its faults – the LCFS at least recognizes the benefits of letting the market pick winners and strives for neutrality. It is incongruous, to say the least, for CARB with one hand to tout the benefits of a technology neutral fuels policy, while with the other hand plucking a single technology out of that "fuel neutral" policy and in the most heavy-handed way, mandating its deployment.

CARB staff has chosen to overlook the fact that there are entities who are voluntarily investing in this infrastructure and companies that will directly benefit from development and deployment of these technologies (Linde, Air Products, etc.). These companies have been most involved in the AB118 grants for refueling stations in California – and have been involved in hydrogen infrastructure build out in other countries. Rather than compel unwilling investment in this technology, CARB should work with those who are interested in deploying the technology to remove the hurdles to more investment.

CARB staff argue that the vehicle manufacturers have invested billions of dollars in alternative fuel drive trains and now the fuel providers must do likewise. This alleged parity ignores the billions of dollars the oil industry has spent over the years on reformulated fuels (multiple times) pursuant to CARB's regulations; and the billions more estimated to be spent to comply with the California LCFS and the federal Renewable Fuels Standard. At the same time, CARB now wants to require the industry to spend more money to displace the same fuel we have invested in reformulating.

Fuel providers and station owners deserve the fundamental protection and the freedom to elect the business opportunities in which they choose to invest. As staff has acknowledged, most retail stations are no longer owned and operated by the fuel providers and even further divestments by refiners/importers are anticipated. The amended regulation requires fuel providers develop and invest in hydrogen fuel outlets and presumes that this will occur on other people's property. Most retail stations are owned by an individual who only owns one station with an annual net income of about $40,000 on a national basis. The owner could face significant business loss from the lack of on-going hydrogen fuel sales should the vehicles not materialize, or from displaced business when forced to site the hydrogen equipment.– or more significantly, if the plot space required for the hydrogen storage and dispensing infrastructure requires displacement of conventional fuel dispensers, convenience store space, car washes and the concomitant loss of associated revenue.

In another scenario, retail station owners may deny access for fuel providers to construct and operate hydrogen dispensing facilities. In this case, infrastructure

required by this regulation would have to be built and operated at new retail sites – adding substantially to the costs and environmental impacts of the proposal. This potential outcome is completely ignored by staff.

The CFO would require fuel providers to commit hundreds of millions of dollars based on very uncertain projections of vehicle sales from vehicle manufacturers. The Clean Car rule appears to be a flexible, performance-based approach which results in giving automakers choices in which technologies they use to comply. In theory, the LCFS is supposed to be the equivalent, performance-based regulation for fuel providers –and the mechanism by which the market will deliver the most efficient lower carbon fuels However, CARB has chosen to take the unprecedented step of regulating one sector based on the choices and whims of another sector. As previously stated, the CFO would require refiners and importers to invest hundreds of millions of dollars based on projections – not actual vehicle sales – by automakers. This means CARB is requiring refiners and importers to invest based on the compliance pathway that automakers may choose to take. Ultimately, automakers may not chose the pathway (without penalty), consumers may choose not to purchase the vehicles, or automakers may choose to take advantage of the regulation's provision (travel provision) that allows them to comply by delivering these vehicles outside of California – even though the regulation would require build out of fueling infrastructure within California.. What is CARB's plan to reimburse refiners and importers should the investments in fueling infrastructure be required and the cars don't show up? What is CARB's plan to reimburse operators of fueling outlets should they continue to operate at a loss (whether or not the cars show up)?

While the latest version of the regulation adds a penalty for car companies who do not produce 80% of the number of vehicles they projected, the penalty is inconsequential ($35,000) compared to the cost of building and operating even a single hydrogen fueling outlet (let alone the 500 required by the regulation); and the penalty is only based on what is manufactured and not what is sold to a customer. Moreover, fuel providers are subjected to a penalty of $35,000 or higher for every day that the station is late in coming on-line or not operating properly. A single problem or missed deadline could result in penalties an order of magnitude higher than what CARB proposes to levy on the auto manufacturers.

CARB staff and vehicle manufacturers claim that the underlying surveys and projections are accurate, however, the projections are all based on secret discussion between CARB and individual automakers. None of the assumptions that go into these projections, nor the individual automaker projections have been publicly made available – yet CARB is compelling hundreds of millions of dollars of private investment based on these secret projections. Recent experience involving battery electrical vehicles suggests that there should be considerable skepticism leveled at automaker projections of sales of these new technologies. Fuel providers and retail station operators should not be required to invest, construct, and operate such facilities with this

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level of uncertainty. There is no discussion in the regulation regarding the probability and circumstances associated with stranded assets.

BP's recommendations for a sound policy and regulatory approach

- Due to the early stages of development of hydrogen for transport, policy should focus on helping those who are interested in and will benefit from deployment of this technology. Policy should not force unwilling participants into this business.
- Continue public funding of retail stations through programs like AB118 and ensure that in the AB118 reauthorization process, adequate money is allocated for hydrogen refueling stations in the geographic areas desired. The public should share in the risk of this early commercialization phase.
- Seek public-private partnerships and creative financing approaches to extend the use of the public money in contrast to the grant programs that are prevalent now.
- Seek incentives for fleet conversions (public and private) that reward operators who make their fueling facilities accessible to the public.

In addition to the overarching policy concerns expressed above, BP has concerns about specific regulatory language and the supporting staff documentation for the regulation that is included in an appendix to this letter. BP also supports the comments submitted by the Western States Petroleum Association (WSPA) In summary, BP recommends that the board oppose the proposed CFO amendment, direct staff to rescind current regulation, and pursue the public incentive based concepts outlined above. BP appreciates CARB's consideration of these comments regarding the CFO regulation and we look forward to your response.

Sincerely,

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c.c w/attachment.

CARB Board Members
CARB Executive Officer
Tom Cackette – CARB
Analisa Bevon – CARB
Leslie Goodbody - CARB

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APPENDIX 1

Regulatory Order

1. The regulation defines a major refiner/importer as being an entity that produces or imports more than 32,616 bbl/day (based on 500 mmgl/year) and then applies the requirements for retail outlets to major refiner/importers. However, CARB proposes to use BOE data based on sales volume for determining the percentage of outlets assigned to a particular company. To be consistent with the definition of producer/importer, and other CARB regulations like the AB32 Admin Fee regulation, the basis for share of regulatory burden should be the volume a company produces and imports.

2. Both the current and the existing regulation includes provisions for fleets. It is assumed that 25% (subject to change) of fleet vehicle fuel demand will be provided by retail outlets so this quantity plays into the calculation for number of stations. What basis did CARB use to determine 25% factor?

3. The regulation is very prescriptive regarding station requirements including a requirement to provide H2 at both 5,000 psi and 10,000 psi. It is our understanding that the 10,000 psi pressure is likely the preferred pressure going forward. It would be best to standardize on one pressure to prevent customer confusion and to bring more consistency to costs. BP suggests CARB analyze the cost increment of offering two pressures as opposed to just one.

4. Please confirm that while CARB utilizes 400 kg/day to determine a retail station count based on projected hydrogen demand, CARB does not specify that all stations must be 400 kg/day. If CARB is specifying this capacity per retail station, it needs to be clear in the regulatory language and CARB must analyze the costs, with ample contingency, of a 400 kg/day refueling station which notably is larger than any station built to date in California.

5. While it is helpful that CARB provide notification nearly 3 years in advance, this can contribute to less accurate projections. It appears that CARB will reconcile progress on the annual projections about 2 years out and make adjustments to the retail station counts. BP suggests that this same exercise also be done about 12 months ahead of when stations are required. Furthermore, stations should be able to be installed and brought on-line ratably across the calendar year in which they are required. This is necessary to ensure that engineering and construction resources are available. In addition, both of these changes will help ensure that the stations built most closely match vehicle roll-out and anticipated fuel demand.

6. It appears that existing retail stations not owned by producers/importers are accounted for against the projected need if they meet the design standards and pledge to operate for a year. In addition, stations owned/operated by third parties can be 'constructively allocated' to obligated parties under this regulation for credit under specified conditions. BP suggests that any stations

funded by AB 118, or similar public incentive funds, be credited up-front, with little restriction, to ensure that these stations are used fully before incremental stations are required by the regulation.

7. The regulation requires that if a subsequent calculation shows no incremental retail stations are required, then the existing stations have to remain in operation. However, this section does not define how long. There needs to be a finite amount of time that stations are required to be kept open when the vehicles and fuel demand are not progressing. The ISOR indicates 1-year of O&M costs (page 62) in this scenario where stations shutdown and are decommissioned. For consistency, the time horizon for continued operation of under-utilized retail stations should be no longer than 1-year in the regulation.

8. The regulation provides for very limited relief from operating requirements under breakdown provisions. However, it appears that there is no relief when construction and start-up of stations is delayed. This can occur for a number of reasons beyond the control of the regulated party – for example, permitting delays, equipment availability and delivery. Language outlining a procedure should be added to enable companies to avoid penalties when there are circumstances beyond their control occur.

9. The regulation contains penalty provisions, including a new provision to penalize an OEM that does not deliver (vs. sale) 80% of the vehicles they projected. While adding a penalty for OEMs that do not make their projections is a good step, this proposal does not go far enough. First, it is preferable that it be based on amount sold since it is vehicles sold that will generate the fuel demand to enable stations to recover their costs. If CARB retains the provision based on delivered vehicles, then it should be based on 100% of their projections and not 80% projections. There are substantial per day penalties also for refiner/importers who do not complete the stations in time, or do not operate them in accordance with the standards (barring breakdowns/malfunctions covered in other parts of the reg). However, the penalty for the OEMs is a small fine only assessed each time a projection is missed – not per vehicle or per day that the OEM fails to deliver or sell a vehicle. The penalty provisions should comparably penalize the OEMs to what is proposed for retail stations.

ISOR

1. The regulation contemplates the option to fulfill the requirements with a stand-alone hydrogen fueling station in lieu of equipping existing retail sites. In fact, if no retail station owners allow a fuel provider to build and operate a dispenser on their site, all fueling infrastructure required by this regulation would have to be built on new sites – incurring huge incremental costs relative to the premise of the regulation. Do the analyses include the additional costs (land and other improvements) required to build a freestanding station? Do the environmental analyses include the consideration of additional impacts for the construction, traffic, etc. for such stations?

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2. The ISOR asserts (on page 2) that hydrogen vehicle roll-out is hampered by the lack of publically available hydrogen refueling infrastructure. The citation referenced to substantiate this assertion is a New York Times Article (footnote 2). Is the staff really using a newspaper article citation as justification for compelling private entities to invest hundreds of millions of dollars ahead of market demand? Perhaps the article cited includes underlying data or studies, but those primary references should be included in the staff analysis – not a newspaper article.

3. On page 11, CARB staff discusses additional future stations funded by AB118 and that stations are required to operate for a minimum of 3 years. After 3 years, if a station elects to shutdown, it is unclear whether the regulators are going adjust the number of stations that are required to be constructed and operated under CFO. If it is anticipated that parties regulated under CFO (fuel providers) will be required to operate an unprofitable station beyond the 3 years, what incentive does the current owner/operator have to try and stay in business. Fuel providers should not be required to "take-over" or make-up the capacity of AB118 funded stations that fail. Moreover, if stations are failing, this suggests lack of demand for the vehicles and fuel – necessitating a system-wide review of the need or wisdom of the CFO regulation.

4. On page 24, we would appreciate confirmation that when the projections for each year are added together that these are the incremental projections for each year and that there is no double-counting of vehicles. This is not clear in the staff report or the regulation. Similarly, it is not clear why the 1/3rd factor is used for the year that is three years prior to the year that is being projected. Since this factor is applied during that year that the forward-looking projection is being made, it would seem logical that the amount of vehicles actually sold in the first part of the year should be extrapolated over the balance of the year verses using one-third of a dated projection value.Date