better place

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March 9, 2012

Alternative and Renewable Fuel and Vehicle Technology Program
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Re: Docket Number 11-ALT-1, 2012-2013 Investment Plan Comments

Dear Sir/Madam,

Thank you for the opportunity to provide input on the draft investment plan created by the California Energy Commission for the Alternative and Renewable Fuel and Vehicle Technology Program in 2012-2013. We commend the thoughtful investments proposed for the future of clean transportation and economic development in California. To allow the commission to allocate limited funds most effectively, we have three broad recommendations and key suggestions.

To help ensure widespread adoption of zero-emissions transportation, we urge the state to consider current consumer behavior, encourage economically sustainable approaches, and allow for innovative solutions proven in global competition.

We celebrate the success of the all-electric Nissan Leaf and other similar cars, but see mounting evidence that the high upfront cost and range constraints will limit sales to a small segment of drivers willing to compromise on cost and driving range. Now that many of the high-income, "early adopter" buyers have already gone electric, sales data from January and February 2012 indicate that demand for plug-in electric vehicles is slowing. To meet California's ambitious climate, pollution and economic development goals and to truly transform transportation under AB 118, the investment plan needs to bridge the chasm of compromises that keep middle-class consumers from choosing advanced transportation options. As described by the new White House initiatives on electric vehicles, the economy will benefit when electric cars are more affordable and convenient than gas-powered cars. Below we will detail some key adjustments to the investment plan that will help California achieve mass market deployment of pure electric cars.

Second, we support the staff's approach to system-wide thinking to ensure projects will be economically beneficial to the state and consumers in the long run. The current staff draft considers the infrastructure tipping point for hydrogen vehicles, aiming to fund projects that will lay the foundation for a viable network. However, unlike with EV networks, fuel cell vehicles and their associated networks will not be economically viable in the foreseeable future, and the major automakers have pulled back on their investments. We strongly encourage the commission to take a system-wide approach in funding electric vehicle infrastructure. The network approach will be transformational because an electric "mile" is already significantly less expensive than a gas "mile," and there are many production electric vehicle models on sale or in the pipeline. We also encourage the commission to foster economically sound approaches by supplementing the grant program with loans targeting infrastructure that will benefit the state over time. Funding a network with debt filters out non-sustainable business models, while allowing Californians to reap the benefits of lower cost, no-compromise electric transportation.

The final key element to a more effective investment plan is funding for competitive and innovative solutions from around the world, thus attracting additional investments to California aligned with AB32 goals. These include business models and new infrastructure paradigms that solve the cost and range issues for consumers. To enable mass-adoption of electric cars, Better Place separates battery ownership from car ownership, providing mobility services that make electric cars more affordable to own and convenient to drive than traditional gas-powered cars. Better Place's ownership of the battery lowers the upfront cost to the consumer, removes critical technology risks, allows for better financing, and integrates new technology more rapidly. Renault offers battery leases for its electric cars worldwide, State Grid Corporation of China has

deployed and is operating battery switch stations with plans to build more than 2,000 stations across the country, and Tesla has endorsed the importance of a switchable battery. We respectfully request that the final investment plan and solicitations encourage market-transforming solutions such as battery switching and innovative business models such as electric mobility-as-a-service.

Following are specific recommendations we feel will increase the impact of the investment plan.

Alternative Fuel Infrastructure
We suggest transferring $10 million from the proposed allocation to hydrogen fueling infrastructure to support electric vehicle infrastructure. As the commission faces a smaller total allocation, investments that leverage better economics become more important. Given the ARB's December 2011 decision to focus the Clean Fuels Outlet on zero-emissions fuels, we recommend that ARB and CEC expand the definition of clean fuels to include electric vehicle charging as well.

The staff report requested recommendations on fast-charging infrastructure. Instead of specifying fast-charging equipment in a solicitation, Better Place recommends solicitations that encourage the desired performance-based outcome: rapid range extension through systems that allow for a driving experience competitive with gasoline cars, while maximizing the benefits to the electrical grid. We propose that the solicitation allow for "instant charge" battery switching, alongside fast-charging. We recommend language that permits battery separation, encourages managed charging and requires range extension. Battery switch stations coupled with smart charging infrastructure serve transport needs and can simultaneously be operated as a "virtual power plant" and electricity storage resource to the grid.

Alternative Fuel and Advanced Technology Vehicles
The staff report carefully examines the barriers to adoption of electric cars, and Better Place agrees that upfront cost and infrastructure are key barriers. However, we respectfully disagree that "battery capacity," strictly speaking, is the barrier. Taking the consumer perspective, driving range is the barrier. We recommend that the solicitation language encourages vehicles that can achieve more zero-emission miles, regardless of battery capacity. Battery switching enables instant charge with today's battery technology, allowing even high-mileage drivers to convert. Incentives should encourage these high-mileage drivers because converting them will have a larger impact on the goals of AB 118. Incentives should be directed at promoting investment in networked, controllable electric car charging infrastructure to capture the dual-use potential of networked cars as a resource for better renewable energy adoption and improved grid reliability.

Emerging Opportunities
To encourage cooperation across multiple entities, Better Place recommends that the Energy Commission specifically solicit new grid-car integration projects via the Emerging Opportunities allocation. Projects would include aggregated charging management, battery asset utilization studies and other service innovations. We request that the Energy Commission make the funding available through new solicitations. We recommend that the Commission evaluate potential projects based on their miles of gas-powered travel displaced, their life-cycle energy use reduction, their collateral benefits to other renewable energy and grid reliability goals, and their viability with consumers.

Manufacturing
Better Place supports the $20 million allocated for manufacturing facilities and equipment. Due to the high-skill research and development workforce in California, prototype manufacturing will be especially critical for the state. Because this forward-looking design for manufacturing will require upfront investment and produce significant job-creation over time, it is critical that solicitations allow for flexibility on invoice timing.

Regional Alternative Fuel Readiness and Planning
Better Place supports increasing the proposed regional readiness funding and expanding the scope to cover charging infrastructure network planning. This has great potential to ensure that the remainder of the program funding is spent for maximum impact. We recommend extending the partnership opportunities with municipalities beyond permitting to include joint Infrastructure Bank applications. Regional readiness funding

should support leveraging additional state infrastructure funding to develop the most useful network for consumers. This is especially important, as California would become more attractive to the proposed $1 billion “EV Communities” funding in the President’s 2013 budget proposal.

For the first time in a century, drivers have an alternative to their gasoline cars, without compromise. Nation-wide deployments in places like Israel and Denmark have proven that electric cars are ready to displace gas-powered cars for a wide-range of consumers. With retail gas prices 50% lower than in Europe, California needs to partner with private investment to lower the cost of capital to attract the new business models that make it possible to transform transportation, improve air quality, reduce gas consumption, and curb greenhouse gas emissions.

Sincerely,

Jason Wolf
Vice President North America
Better Place