Buena Vista Water Storage District

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November 10, 2010

Mr. Rod Jones
Project Manager
CALIFORNIA ENERGY COMMISSION
Siting, Transmission, and Environmental Protection Division
1516 Ninth Street, MS-15
Sacramento, CA 95814-5512

Re: Statement in Support of Hydrogen Energy California Power Plant Project's Proposed Use of Buena Vista Water Storage District's Brackish Water
(California Energy Commission Docket No. 08-AFC-8)

Dear Mr. Jones:

Buena Vista Water Storage District ("Buena Vista" or "District") wishes to thank you for the opportunity of allowing the District to consider and favorably comment upon the important issue of using brackish groundwater supplies underlying the District for the proposed Hydrogen Energy California Power Plant Project (HECA Project). In addition to the State Water Resources Control Board correspondence dated June 20, 2010 which discusses certain State Water Resources Control Board policies (SWRCB Correspondence), the District also wishes to provide the California Energy Commission (CEC) with, and comment upon, other specific policies of the State of California which clearly and unequivocally support the use of the District's brackish groundwater for the HECA project.

As an introductory matter, Buena Vista Water Storage District (the supplier of the brackish water to be used in the HECA Project) is a California Water Storage District, formed and operating under Division 14 of the California Water Code (Section 39000, et seq.) The District principally supplies irrigation water to landowners. In accordance with its enabling legislation, the District is vested with all power and authority necessary to enable it to acquire, improve, and operate necessary works for the storage and distribution of water and any drainage or reclamation works connected therewith (see for example Water Code §§ 43000 and 43150). In fact, for water storage districts such as Buena Vista, the California Legislature has specifically provided that "All waters and water rights belonging to this State within the district are given, dedicated and set apart for the uses and purposes of the district." (Water Code § 43158.)

As part of the District's ongoing water management planning and operations, and in accordance with the powers and authorities vested in the District with respect to water-related issues, the District has developed and adopted a water management plan, known as the BUENA VISTA WATER MANAGEMENT PROGRAM ("Water Management Program"). The Water Management Program's Final Environmental Impact Report (FEIR) was certified on January 12, 2010 [State Clearinghouse No. 2009011008]. The Water Management Program was developed to further implement the District's mission, which is to provide the landowners and water users of the District with a reliable, affordable, and usable water supply, while facilitating programs that protect and benefit the groundwater basin and better utilize water supply resources (FEIR p. I-1). The Water Management Program consists of four components, each such component being a separate and individual project designed to more effectively and beneficially manage the District's water resources. The four Water Management Program components consist of:

Component 1: a Groundwater Recharge and Recovery Project;
Component 2: a Water Exchange Project;
Component 3: a Conservation Easement Water Acquisition and Management Project;
and Component 4: a Brackish Groundwater Remediation Project.

It is the last referenced water management project that is of interest in the HECA Project process. The Brackish Groundwater Remediation Project (BGRP) was developed to remediate brackish groundwater conditions within certain areas underlying the District. By way of background, there are a number of localized areas and zones within the District that contain elevated TDS concentrations in the range of 2,000 to 4,000 mg/l. Typically, these areas are located along the westerly District boundaries. These high TDS waters recharge the underground aquifer from the west (FEIR, p. III-7). Elevated TDS concentrations have already adversely impacted plant growth and crop yields in certain areas (FEIR, p. II-10). The purpose of the District's BGRP is to construct and operate strategically located brackish groundwater recovery wells and associated collection and conveyance pipelines that will extract and transport brackish water to participants who will operate receiving facilities that may be located either inside or outside District boundaries (FEIR, p. III-5). The HECA Project is one such participant. The use of extraction wells will enable the District to reduce the inflow of brackish groundwater underlying the District, thus tending to halt or slow the reduction of irrigable acres within the District, while also halting or slowing any trends of local farming interests to grow less economically viable crops or, in some cases, eliminate farming practices altogether.

With respect to the SWRCB Correspondence, the District fully concurs with the statement contained therein that provides ". . . state policy for water quality control does allow, under some circumstances, the use of supply water with TDS ranging from 1,000 to 3,000 mg/l to supply renewable energy projects." In fact, the circumstances surrounding the HECA Project and use of brackish water pursuant to the District's BGRP are fully consistent with such statement and the other principles that are discussed in the SWRCB Correspondence. As an example, the anticipated TDS of water provided under the BGRP to the HECA Project is expected to be within the range of 2,000 to 4,000 mg/l (FEIR, p. III-7), which is clearly within the TDS parameters referenced in the SWRCB Correspondence and therefore consistent with SWRCB Resolutions 75-58 and 88-63.

Additionally, the water to be provided is "brackish water from natural sources" as referenced in SWRCB Resolution 75-58 and as discussed in Principle No. 1 of such

correspondence. The District's supply meets the priority scheme suggested by Principle No. 1 because no other higher priority brackish water is available for the project (higher priority water being defined and limited under Resolution 75-58 to only "wastewater being discharged to the ocean" or "ocean" water).

Use of brackish water pursuant to Buena Vista's BGRP is also consistent with Principle No. 2 as set forth in the SWRB Correspondence. The water being provided is not "fresh inland waters" as defined or described within such correspondence or as referenced in SWRCB Resolution 75-58. Again, the supply water will be brackish groundwater with an anticipated salinity range of between 2,000 to 4,000 mg/l, and which provides no habitat for fish or wildlife.

Use of brackish groundwater provided from Buena Vista's BGRP is also consistent with Principle No. 7, which suggests using wastewater for power plant purposes if available. The brackish water being provided by the District is consistent with this principle in that (a) no wastewater is available for use at the HECA Project location, and (b) using the naturally occurring brackish water is of a higher use "priority" than using wastewater, as is referenced in the priority scheme set forth in Principle No. 1 above and in SWRCB Resolution 75-58.

Buena Vista would also like to advise the CEC that Buena Vista Water Storage District's geographic boundaries are not located in a "water short area" where the commodity value of the water is so high that even highly brackish water should be preserved solely for domestic use. In fact, total District groundwater replenishment currently exceeds District groundwater extraction by an annual average of approximately 46,000 acre-feet per year (FEIR, p. III-2). Therefore, the use of Buena Vista's brackish groundwater for the HECA Project will not result in a water supply deficit within the area.

As explained above, Buena Vista believes the use of water pursuant to its BGRP is fully consistent with SWRCB policies, including Resolutions 75-58 and 88-63, as referenced and discussed in the SWRCB Correspondence of June 20, 2010.

In addition to the policies and SWRCB resolutions referenced in the SWRCB Correspondence, there are other California policy statements that support the use of Buena Vista's brackish groundwater for the HECA Project. In fact, the State of California has regularly and consistently recognized salinity and brackish water as an area of concern within the state. For example, the State Water Resources Control Board has included a statement on its website, as follows:

> Elevated salinity and nitrates in surface water and groundwater are increasing problems affecting much of California, other western states, and arid regions throughout the world. In California, as surface and groundwater supplies become scarcer, and as wastewater streams become more concentrated, salinity and nitrate impairments are occurring with greater frequency and magnitude. (See: www.swrcb.ca.gov\centralvalley\water-ssues\salinity\index.shtml.)

Furthermore, the State of California, by and through the State Water Resources Control Board, adopted Resolution 2009-0011 which, in turn, adopted California's Recycled Water Policy. The preamble to the Recycled Water Policy includes the following statements:

> "To achieve that mission, we support and encourage every region in California to develop a **salt/nutrient management** plan by 2014 ...." (Emphasis added.)
>
> "We strongly **encourage local and regional water agencies to move toward** clean, abundant, local water for California by emphasizing appropriate water recycling, water conservation, and maintenance of supply infrastructure ...." (Emphasis added.)
>
> "We declare our independence from relying on the vagaries of annual precipitation and move towards sustainable **management of** surface waters and **groundwater**, together with enhanced water conservation, water reuse, and the use of stormwater." (Emphasis added.)

Section 6.b.(a) of the Recycled Water Policy proposes the adoption of salt/nutrient management plans and specifically provides:

> "It is the intent of this Policy for every groundwater basin/sub-basin in California to have a consistent **salt/nutrient management** plan. The degree of specificity within these plans and the length of these plans will be dependent on a variety of **site-specific factors**, including but not limited to size and complexity of a basin, source water quality, stormwater recharge, hydrogeology, and aquifer water quality." (Emphasis added.)

In August of 2009, a memorandum was circulated by the Executive Officer of the State Water Resources Control Board informing the Regional Water Boards of their role in implementing the Recycled Water Policy with a goal of initiating and participating in stakeholder processes for the development of salt/nutrient management plans.

A further example of the State of California's acknowledgement of and concern over brackish water and salinity management is the fact that an entire chapter was devoted to salt and salinity management in the 2009 California Water Plan, Bulletin 160-09 of the Department of Water Resources ("California Water Plan"). The California Water Plan's steering committee includes representatives from a number of state agencies, including but not limited to the California Energy Commission, the California Environmental Protection Agency, the California Natural Resources Agency, the California Public Utilities Commission, the Department of Public Health, the Department of Water Resources, the Governor's Office of Planning and Research, the State Water Resources Control Board, and Regional Water Boards. (Water Plan, p. 1-12.) Chapter 18 of the California Water Plan, which is entitled *Salt and Salinity Management*, is dedicated entirely to salt and salinity management and in part provides:

> **"Local and regional solutions to salt management can vary significantly, but are generally most appropriate to local and regional scales**, unless the planning process in developing those solutions determine that there is a benefit to developing infrastructure at a State level. Therefore **salt management should be fully integrated into water management** such as through integrated regional water

> management plans." (California Water Plan, p. 18-14.) (Emphasis added.)

Clearly, the State of California has recognized that not only is salinity a problem, but that it must be managed, beginning at the local level. To further support his proposition, the California Water Plan also states:

> "**Local solutions should be sought first**, as these can be implemented more rapidly than those imposed by State or federal authorities. All stakeholders affected by nitrate, seawater intrusion, soil or **groundwater salinization** or loss of fresh water flows should address salt management ...." (California Water Plan, p. 18-24.) (Emphasis added.)

The drafters of the California Water Plan also acknowledge ". . . water quality protection is more cost effective and has a greater chance of success than water quality remediation." (California Water Plan, p. 18-18.) This is precisely the type of water management program that the District is implementing under its BGRP, to wit: remove/extract the inflow of brackish water from the westerly edge of District boundaries to prevent salinization of higher quality water underlying the District. The extraction of such brackish water is the most cost-effective approach for managing the salinity problem underlying the District.

Under the *Collaboration* section within Chapter 18 of the California Water Plan, it is suggested that all state, federal, and local agencies should implement projects that assist the state's communities, watersheds, and regions in achieving a sustainable salt balance and that all such entities "should strive to coordinate their efforts where possible." (California Water Plan, p. 18-28.) Under the present circumstances, Buena Vista urges the coordination and cooperation of the CEC in allowing the HECA Project to use Buena Vista's brackish groundwater pursuant to the District's BGRP.

In addition to the Recycled Water Policy and the California Water Plan referenced above, salt-related problems have also been recognized by the U.S. Department of the Interior and the California Resources Agency. An example of such recognition is provided in the September 1990 report entitled A Management Plan for Agricultural Subsurface Drainage and Related Problems on The West Side San Joaquin Valley, commonly known as the "Rainbow Report". The Rainbow Report recognizes that salts have been a persistent problem in parts of the San Joaquin Valley for more than a century, making some cultivated land unusable as far back as the 1880s and 1890s (Rainbow Report, p. 15). The Rainbow Report also acknowledges that without proper mitigation measures, economic impacts to the San Joaquin Valley could be severe, and as a result of a decline in irrigated acreage, income, sales, and jobs will suffer tremendously. In fact, as of 1990, which is the year of the report's preparation, the economic effects of unchecked salinity problems were estimated to result in hundreds of millions of dollars in economic damages or losses on an annual basis (Rainbow Report, p. 83). The report also indicates that one of the methods available for coping with salinity and brackish water problems is through groundwater management, and the use of wells to extract brackish water (see for example, Rainbow Report, pp. 88 and 102). Interestingly, one of the brackish water management methodologies suggested in the Rainbow Report is exactly the type of project that will be used by the District to supply water for the HECA project, to wit: extract brackish water in an effort to protect and enhance other groundwater underlying the District.

As yet another example of the State of California's acknowledgement of and concern over brackish water, The Central Valley Regional Water Quality Control Board, in a report entitled Salinity in the Central Valley, an Overview (May 2006), also recognizes the impacts that brackish water and salinity are having within the State of California. The report references that cropping patterns may change, jobs may be lost, and other problems will occur as a result of salinity increases. The report also recognizes that, as is the case in the Buena Vista Water Storage District, salinity problems can be caused by naturally occurring salinity in soils and groundwater, due to the geology of the area. The report further provides that salinity management involving environmentally and economically sustainable solutions should take place to ensure that "responsibility for salinity mitigation actions is shared equitably." (Report, p. 53.) Buena Vista believes a viable economic solution is now available through the HECA Project to remediate at least a portion of Buena Vista's brackish groundwater problem.

The California Regional Water Quality Control Board, Central Valley Region, again recognized the problem of brackish water and salinity within a report entitled, Water Quality Control Plan for the Tulare Lake Basin, Second Edition (revised January 2004). The report recognizes that salinity is a problem, that some of the salt load to the groundwater is the result of natural processes, and that absent a drain to carry wastewater from the basin, "The only other solution is to manage the rate of degradation . . . ." (See Report, p. IV-5.)

Not only is the HECA Project's use of District brackish groundwater consistent with California brackish water remediation policies as set forth and defined by the various state regulatory and administrative agencies mentioned above, but Buena Vista believes that such brackish water use is consistent with, and perhaps compelled by, California Constitution Article X, Section 2, which provides:

> It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable ...."

This constitutional provision has also been codified by the California Legislature through both Water Code section 100 and Water Code section 520. In effect, by allowing HECA's use of brackish water pursuant to the District's BGRP, the remaining water underlying Buena Vista can be used for irrigation and/or domestic use, which are the two highest uses of water within the State of California. These high priority uses are codified within Water Code section 1254 which states, "In acting upon applications to appropriate water the board shall be guided by the policy that domestic use is the highest use and irrigation is the next highest use of water." Therefore, the HECA Projects' use of the District's brackish water provides, at a minimum, a trilogy of benefits consisting of:

(1) Putting to beneficial use certain brackish water that is otherwise unsuitable for existing present uses, and allowing it to be used for HECA purposes; and

(2) Protecting the existing groundwater resources underlying Buena Vista Water Storage District from persistent brackish water intrusion, thus enhancing such groundwater; and

(3) Allowing the newly protected groundwater resources within Buena Vista Water Storage District to be used for agricultural and/or other beneficial uses.

Without HECA's use of brackish water pursuant to the District's BGRP, water resources underlying Buena Vista Water Storage District will be of limited usefulness (and therefore of lesser beneficial use) as a result of brackish water intrusion that will continue to exacerbate groundwater salinity problems underlying the District.

As is evident from the above, the HECA Project's use of brackish water pursuant to Buena Vista's BGRP is not only consistent with California water policy as considered and developed by various state administrative and regulatory agencies, but such use is also consistent with the State Legislature which has repeatedly acknowledged that brackish groundwater is a problem within the State. The Legislature has specifically referenced brackish groundwater, desalination, or other salinity problems within Water Code sections 10013, 10608.50, 12947, 79545, and 79547.2, and the necessity to protect and manage the groundwater within the State (Water Code § 79501(e)) through a coordinated control of all factors that affect water quality in any given area (Water Code § 13241(c)).

In conclusion, the interception, extraction, delivery and use by the HECA Project of brackish water underlying Buena Vista Water Storage District pursuant to the District's Groundwater Management Plan and Brackish Groundwater Remediation Program is entirely consistent with state, regional, and local water management policies and associated mitigation implementation strategies. In fact, the use of such brackish water by the HECA Project will provide a clear benefit by protecting other Buena Vista groundwater supplies for higher and better uses, including irrigation and/or domestic use. As was stated by the California Legislature in 2002, "The Legislature finds and declares all of the following . . . The long-term economic and environmental sustainability of agriculture is critical to the future of the state, and it is in the interest of the state to enact policies that enhance that sustainability." (Health and Safety Code § 25209.10). The HECA Project's use of Buena Vista's brackish water will further this stated goal, the other State policies discussed above, and be consistent with Water Code section 13146, which provides, "State offices, departments and boards, in carrying out activities which affect water quality, shall comply with state policy for water quality control unless otherwise directed or authorized by statute, in which case they shall indicate to the state board in writing their authority for not complying with such policy."

We appreciate the opportunity to comment on this very important issue and to indicate our support for the use of Buena Vista Water Storage District's brackish groundwater for the HECA Project. If you have any questions or concerns, please do not hesitate to contact me.

Sincerely,

BUENA VISTA WATER STORAGE DISTRICT

Dan W. Bartel, Engineer-Manager

DWB:vty

cc: Robert W. Hartsock, Esq.
McMurtrey, Hartsock & Worth
(Your File No.: BV-5.2.16)