CALENDAR ITEM
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S	38	J. Brown M. Meier S. Mindt

AMENDMENT OF LEASE

LESSEE:
Cabrillo Power I, LLC (Cabrillo)
1817 Aston Avenue, Suite 104
Carlsbad, CA 92008

APPLICANT:
Poseidon Resources Channelside LLC (Poseidon Resources)
501 West Broadway, Suite 1260
San Diego, CA 92101

AREA, LAND TYPE, AND LOCATION:
5.548 acres, more or less, of sovereign lands in the Pacific Ocean, city of Carlsbad, adjacent to Agua Hedionda Lagoon, San Diego County.

AUTHORIZED USE:
Continued use and maintenance of existing intake and outfall structures.

LEASE TERM:
Twenty years, beginning December 14, 2006.

CONSIDERATION:
First year's rent of $123,000, referred to as the "Base Rent". The "Base Rent" to be adjusted annually by the Consumer Price Index (CPI) for All Urban Consumers, San Diego, CA, with the State reserving the right to fix a different "Base Rent" periodically during the term of the lease, as provided in the lease. This consideration is for the lease as a whole, and not simply for the amendment here considered.

A) PROPOSED AMENDMENT:

The proposed Amendment includes Poseidon Resources (Channelside) LLC as a co-Lessee and allows the intake of sea water and the commingling of brine water discharge for the desalination facility.

~~Poseidon shall, at all times during the term of the Lease, fully offset all of the direct and indirect greenhouse gas emissions from the generation of electricity and other energy used for the construction and operation of the desalination facility. The calculations conducted to ensure compliance with this provision shall include accurate and transparent measurements and independent verification to the satisfaction of the Executive Officer in accordance with procedures outlined by the California Climate Action Registry (CCAR), California Air Resources Board (CARB), or state-approved programs under the control of local air control districts, hereinafter referred to collectively as "Air Boards". Poseidon must submit annual reports to the Commission's Executive Officer showing Air Board verification of accounting and offset measures. Determination of compliance with this provision will be made annually by the Commission's Executive Officer.~~

Poseidon shall, at all times during the term of the Lease, comply with the Energy Minimization and Greenhouse Gas Reduction Plan (the GHG Plan), as adopted by the California Coastal Commission on August 6, 2008, except that, notwithstanding the provisions of that Plan:

a) Poseidon shall also, at all times during the term of the Lease, fully offset direct greenhouse gas (GHG) emissions from the generation of electricity and other energy used for the construction and operation of the desalination facility. Additionally, Poseidon will be deemed to have offset construction impacts by obtaining 1,327 tons of carbon offsets/RECs subject to the verification procedures in the GHG Plan;

b) The provisions of the GHG Plan entitled, "Contingency if No GHG Reduction Projects are Reasonably Available," shall not apply to this Lease;

c) At any time during the term of the Lease, Poseidon may seek a determination from Commission's Executive Officer that (i) offsets in an amount necessary to mitigate the Project's GHG emissions are not reasonably available; (ii) the "market price" for carbon offsets or RECs is not reasonably discernable; (iii)

the market for offsets or RECs is suffering from significant market disruptions or instability; or (iv) the market price has escalated to a level that renders the purchase of offsets/RECs economically infeasible to the Project. Any request submitted by Poseidon shall be considered and determined by the Commission's Executive Officer within 60 days. A denial of any such request may be appealed by Poseidon to The Commission for consideration at the next available public meeting of Commission. If Poseidon's request for such a determination is approved by the Commission's Executive Officer, Poseidon may delay or postpone acquisition of carbon offsets or RECs required under this lease for a period of up to three years following the Commission's Executive Officer's determination, provided that Poseidon does ultimately acquire all carbon offsets or RECs required under this lease;

d) In calculating the amount of reduction in GHG emissions from the State Water Project (SWP) that Poseidon may take when calculating the amount of carbon offsets or RECs it must acquire under the GHG Plan, Poseidon shall take into account only that amount of water from the SWP to which the Metropolitan Water District (MWD) is entitled to take, but that the MWD does not take.

~~Poseidon shall provide 55.4 acres of marine wetlands restoration to compensate for the unavoidable intake (impingement and entrainment) and mortality of marine life associated with the use of the Lease premises. Restoration may be implemented in no more than two phases, with the first phase comprising not less than 37 acres. The Plan for implementation of Phase II shall be completed and submitted to the California Coastal Commission and the California State Lands Commission within five years after the issuance of the Phase I coastal development permit application. Poseidon shall be responsible for providing funds reasonably necessary, as determined by the Commission's Executive Officer, to operate, monitor and maintain the marine wetland restoration area(s) required by another federal, state or local regulatory agency but for no less than the term of the lease. Construction and planting of the Phase I site(s) shall be completed prior to the operation of the desalination facility.~~

~~Compliance with this provision shall require that the restoration site(s) attain performance standards as are approved by the Executive Officer. Performance standards shall address, at minimum, water salinity, dissolved oxygen, elevation, sedimentation and erosion, soil organic matter, algae cover and species-~~

~~richness, vascular native plant cover and species-richness, and fish density and species-richness.~~

~~Obligations for Phase II of the wetland mitigation may be proportionally amended by the Commission if it finds that Poseidon will implement technologies to reduce marine life impacts caused by entrainment and impingement.~~

~~Mitigation sites shall be self-sustaining prior to release of the performance bond. Self sustaining is defined as meeting the wetland performance standards without being artificially-maintained through use of methods such as fertilization, irrigation, or weeding for a period not less than three years.~~

Poseidon shall, at all times during the term of the Lease, comply with the Marine Life Mitigation Plan, as adopted by the California Coastal Commission on August 6, 2008. Poseidon will provide copies of all reports that are required to be provided to the California Coastal Commission to the Commission's Executive Officer at the time any such reports are required to be submitted to the California Coastal Commission. The restoration project shall require up to 55.4 acres of wetlands restoration to be implemented in two Phases, with the first Phase (Phase I) comprising not less than 37 acres of wetlands restoration, and the second Phase (Phase II) comprising up to an additional 18.4 acres. Obligations for Phase II of the wetland mitigation comprise 18.4 acres, but may be proportionally reduced by the California Coastal Commission if it finds that Poseidon has reduced marine life impacts caused by entrainment and impingement.

The provision of the Marine Life Mitigation Plan not withstanding, Poseidon shall receive no mitigation credits for direct benefits to marine life from dredging that would otherwise be required pursuant to compliance with the Marine Life Mitigation Plan.

24 months after issuance of the Coastal Development Permit for the desalination facility, Poseidon shall submit to the Commission's Executive Officer, for his or her review and approval, proposed performance standards for Phase I of the wetland mitigation. Prior to submitting its Coastal Development Permit application for Phase II of the wetlands mitigation, Poseidon shall submit to the Commission's Executive Officer, for his or her review and approval, proposed performance standards for Phase II of the wetland mitigation. The Commission's Executive Officer shall coordinate his or her review with the staff of the Coastal Commission and the Regional Water Quality Control Board. The Performance Standards

in Phase I and II shall be modified if so directed by the Commission's Executive Officer.

Poseidon shall use the best available design, technology, and mitigation measures at all times during which this Lease is in effect to minimize the intake (impingement and entrainment) and mortality of all forms of marine life associated with the operation of the desalination facility.

Monitoring, maintenance and operation of the wetland restoration site(s) and the reference site(s) may be modified by the Executive Officer to conform to equivalent or superior standards and requirements developed by the San Diego Regional Water Quality Control Board or the California Coastal Commission or any other federal, state, or local entity having applicable jurisdiction.

Ten years from the effective date of this Amendment, or upon notice by Cabrillo that it will no longer require the use of the Lease Premises for the purposes of generating electrical power, the Commission will undertake an environmental review of the ongoing impacts of the operation of the desalination facility to determine if additional requirements pursuant to the Lease, as Amended, are required. The Commission may hire a qualified independent environmental consultant at the sole expense of Poseidon, to analyze all environmental effects of facility operations and alternative technologies that may reduce any impacts found.

Poseidon shall be required to provide a non-cancelable operational performance deposit in the amount of not less than $1,000,000 and a non-cancelable wetland performance deposit in the amount of $3.7 million to ensure implementation of compensatory mitigation, monitoring and maintenance as described in the approved plan.

Prior to commencement of construction, Poseidon shall be required to provide an unconditional guarantee by parent company Poseidon Water LLC for full performance by Poseidon of all the obligations under the Lease.

Prior to use of the Lease Premises, Poseidon shall provide to the Commission a detailed report of compliance with Order No. R9-2006-0065, NPDES No. CA0109223, adopted by the San Diego Regional Water Quality Control Board, on June 14, 2006, and became effective on October 1, 2006, and any subsequent amendments thereto.

Within five years of the effective date of this lease amendment, Poseidon shall provide a written report to the Commission, for use at a public hearing, regarding the status of compliance with the terms of the lease.

In the event that Poseidon fails to comply with any or all of its separate obligations under this Lease, ~~Cabrillo~~ **the Commission** may terminate Poseidon's rights under this Lease Amendment without affecting any or all of Cabrillo's rights or obligations under this lease.

Poseidon shall be responsible for reimbursing all of Commission staff's expenses incurred to monitor compliance by Poseidon of all of its reservations, terms, covenants and conditions of the Lease for the term of the lease. Upon acceptance of the Lease Amendment, Poseidon shall execute a Reimbursement Agreement with the Commission and shall submit an expense deposit of $25,000 as a cash surety to ensure performance.

As its separate obligation within this lease Amendment, Cabrillo shall notify the Commission in writing prior to discontinuing its use of the Lease Premises in connection with the production of electricity. Upon receipt of notification by the Commission, Cabrillo may apply to the Commission for approval of an assignment of its obligations under the lease to Poseidon.

Cabrillo and Poseidon shall be jointly and severally liable for all provisions of this Lease except for those provisions that specify a separate obligation of one or the other.

B) BACKGROUND INFORMATION

1) PROJECT DESCRIPTION

On February 6, 2007, Poseidon Resources applied to the Commission for consideration of the desalination use of the existing intake and outfall structures.

Poseidon proposes to co-locate a four-acre desalination facility within the 95-acre Encina Generating Station currently owned by Cabrillo. The desalination facility as designed would produce up to 50 million gallons per day (MGD) of reverse osmosis (RO) product water. From the desalination plant, the product water would be distributed along several pipeline routes (some proposed, some planned, and some existing) to the city of Carlsbad and various local water districts in Northern San Diego County. Poseidon Resources has indicated that the desalination plant is proposed to be operational by 2010.

Poseidon Resources and Cabrillo have entered into a Ground Lease and Easement for approximately 33 years from the anniversary of the commercial operation date of the desalination facility with an option to extend the term for up

to two consecutive additional periods of ten years that is binding on successors in interest.

The Cabrillo power plant currently uses once through cooling (OTC technology to cool its generators, and the desalination facility would use this water as its source water. This source water would be desalinated using RO technology producing approximately 50 MGD of product water and up to 56 MGD of concentrated seawater (brine) as a by-product. The brine solution would then be commingled, diluted, and discharged with the OTC flows originating from the power plant. Total sea water volumes that would be needed for the desalination process under current conditions would be approximately 106 MGD plus the additional water needed to meet the Board required dilution of the brine.

Cabrillo and Poseidon Resources have entered into an Agreement that specifies the operational and maintenance responsibilities for co-locating the proposed desalination plant adjacent to the existing power plant.

According to Poseidon Resources, eight San Diego County public water agencies (Carlsbad Municipal Water District, Valley Center Municipal Water District, Rincon del Diablo Municipal Water District, Sweetwater Authority, Rainbow Municipal Water District, Vallecitos Water District, the Sana Fe Irrigation District and Olivenhain Municipal Water District) have entered into public-private partnerships with Poseidon Resources Corporation and signed long-term purchase agreements to receive 100 percent of the desalinated water from the Carlsbad desalination plant. The water agencies have provided written statements indicating that the water to be received from Poseidon will replace existing imported or other purchases of water.

2) TAMPA BAY SEAWATER DESALINATION PROJECT

At the public's request, the Commission's staff interviewed staff of Tampa Bay Water to ascertain Florida's experience with a Poseidon project at Tampa Bay, Florida.

In 1999, Tampa Bay Water entered into an agreement with Poseidon Resources to design, build and transfer a 25 million gallon per day desalination facility. Two of the three contractors hired to complete the project filed for bankruptcy. The second contractor completed construction of the desalination facility, but failed to pass the performance acceptance test before filing bankruptcy. Tampa Bay Water then exercised the option to own the desalination facility, and Poseidon Resources was retained for a short period of time as a consultant. In November 2004, Tampa Bay Water's Board selected American Water-Pridesa to remediate the facility and operate it long-term. The plant went offline in June 2005, and

remediation construction began in November 2005. The remediated plant passed an extensive acceptance test, which concluded on November 7, 2007.

The initial cost to build the reverse osmosis plant and 15-mile pipeline was approximately $110 million; however, after completion of significant remediation, the approximate total capital cost of the project was $158 million. According to Tampa Bay's website, pursuant to a Partnership Agreement, the Southwest Florida Water Management District will reimburse Tampa Bay Water $85 million of the plant's eligible capital costs through locally collected ad valorem taxes to offset the cost of alternative water supply development.

3) DESALINATION BACKGROUND INFORMATION

Desalination is a process that removes dissolved minerals (including, but not limited to, salt) from sea water, brackish water, or treated wastewater. A number of technologies have been developed for desalination, including RO, distillation, electrodialysis, and vacuum freezing. The proposed Poseidon desalination project would involve the RO process. In the RO process, ocean water is pretreated to remove particles and then pumped at high pressure through permeable membranes to separate the salts from the water. The quality of the water produced depends on the pressure, the concentration of salts in the water, and the salt permeation constant of the membranes. Product water quality can be improved by adding a second pass through the membranes, whereby product water from the first pass is fed to the second pass.

4) ONCE-THROUGH COOLING BACKGROUND INFORMATION

By drawing in substantial volumes of ocean water, the desalination facility will have some of the same impacts as once-through-cooling operations at coastal power plants. "Once-through-cooling" (OTC) is the process wherein ocean water is pumped through power plants for cooling and then discharged back into the ocean.

Environmental impacts from OTC include the potential for marine organisms to be impinged and entrained as a result of the large volume of seawater intake required for cooling (Exhibit E). Impingement occurs when marine organisms are trapped against components of the cooling water system, such as screens, where they die. Entrainment is the induction of smaller marine organisms into and through the cooling water system where most, if not all, of the organisms are destroyed by mechanical systems, temperature increases or toxic stress. In addition, OTC results in biological impacts through thermal discharge. Thermal discharge refers to the release of cooling water at temperatures above ambient conditions resulting in elevation of the temperature of marine waters in the

immediate vicinity of the outfall. These effects adversely impact coastal and ocean resources and uses as well as public trust resources that are within the jurisdiction of the Commission.

Due to the adverse environmental effects from OTC at coastal power plants that impact coastal and ocean resources and uses, as well as adverse impacts to public trust resources, that are within the jurisdiction of the Commission, on April 17, 2006, the Commission adopted a Resolution regarding "Once-Through Cooling in California Power Plants". However, the California Office of Administrative Law in 2006, OAL Determination No. 2, rendered the Resolution void for procedural reasons.

The California Ocean Protection Council (Council), responsible for facilitating interagency regulatory and oversight efforts related to the protection of California's coastal resources, supported the Commission's interests in reducing environmental impacts associated with once-through-cooling coastal power plants by adopting a similar Resolution on April 20, 2006. As a result of this resolution, an interagency coordinating committee was established to integrate agency actions and coordinate regulatory authorities. The Council funded a study to analyze the feasibility of each of the existing coastal plant's conversion to alternative technologies or installation of best technology available, absent an environmental analysis to implement such technologies. The study entitled, "California's Coastal Power Plants: Alternative Cooling System Analysis" was released in February of this year.

Section 316(b) of the Clean Water Act is a federal statute that is used by the U.S. Environmental Protection Agency and authorized States to develop regulations regarding cooling water intakes. The State Water Resources Control Board (Water Board) is currently in the process of developing regulations pursuant to section 316 (b) and is preparing an environmental analysis and recommendations for adoption concerning the State's policy on the best available technology for OTC power plants. The Water Board staff's recommendations are anticipated to be considered at a public hearing sometime in 2008. A federal court found last year that the federal regulations adopted pursuant to section 316 (b) were substantially inconsistent with Section 316(b) and did not adequately protect the environment.

On May 10, 2007, the Commission authorized a 20-year General Lease – Industrial Use No. PRC 8727.1, to Cabrillo for the continued use and maintenance of existing intake and outfall structures, for the use as components of an OTC system associated with the upland Encina Power Plant and for the discharge of water from an existing permitted upland desalination test facility. As a result of the Commission's concerns over the impacts of OTC, Cabrillo's lease

contains special language that assures that Cabrillo will be in compliance with various regulations governing the use of facilities involving intake of seawater, including but not limited to, Section 316 (b) of the Clean Water Act, and federal and state regulations. The existing lease allows the Commission to modify the terms and conditions of the lease should that become necessary based on changes to the technology of cooling for power plants that may be required in their authorized capacities by other governmental regulatory agencies.

The following are pertinent provisions contained in Cabrillo's OTC Lease:

a. Cabrillo is required to provide an annual written report to the Commission identifying conditions imposed upon it by other agencies pursuant to Federal and State laws including the Federal Clean Water Act, section 316(b) and California's Porter-Cologne Water Quality Act. The report shall indicate and provide evidence of Cabrillo's full compliance or engagement in an agency-directed process to achieve full compliance with the identified imposed conditions.

b. The Commission will conduct a public hearing five years after the effective date of the lease in order to publicly review and evaluate Cabrillo's compliance with the terms of the lease as provided for in Section 4, Paragraph 6, including, but not limited to, compliance with the federal Clean Water Act, section 316 (b) and California's Porter-Cologne Water Quality Control Act.

c. Cabrillo agrees to continue periodic maintenance dredging of the entrance and outer basin of Agua Hedionda Lagoon consistent with the provisions of existing Lease PRC 932.1, including amendments thereto, issued by the Commission for placement of dredged spoils. Such maintenance dredging shall continue for so long as the existing power plant requires cooling water from the Lagoon.

5) RELATIONSHIP OF DESALINATION TO OTC

As stated, OTC impacts for power plant operations and desalination operations are similar. Seawater intake for desalination purposes, in some cases, caused less, as compared to OTC, mortality of aquatic organisms impinged on the intake screens due to lower flow rates, but may give rise to increased effects on aquatic organisms due to higher rates of salt brine in the discharge water. Both operations are similar in that organisms will be entrained within the system. The extent of the impacts of each operation are primarily dependent upon flow rates, water temperatures used for cooling the power generators and water

temperatures used in cleaning organisms attached to the interior walls of the pipes utilized for intake, process and discharge of seawater.

The principal benefit afforded to desalination projects located with power plants comes from use of the power plants discharged cooling water. The desalination facility does not have to pay for construction of new intake and discharge facilities. There is an additional economy because feed water has already been pumped out of the ocean by the power plant. Finally, the desalination facility is not imposing an additional entrainment and impingement impact when it uses the water discharged by a power plant. The primary incremental impact is from increased brine discharges.

The Commission adopted the OTC resolution last year, not out of concern over any one power plant, but because of the cumulative impact of California's coastal power plants. According to information provided by the California Energy Commission in a June 2005 Staff Report entitled "Issues and Environmental Impacts Associated with Once-Through Cooling at California Coastal Power Plants", there are 21 coastal plants in California that utilize OTC systems with cumulative cooling water intake flow estimated at over 16 billion gallons per day that generate approximately 24,000 megawatts of power annually (Exhibit E).

There are nine existing desalination plants in California and 19 currently proposed desalination facilities along the coast of California, see Exhibit D. If these desalination facilities are required to dilute their brine discharge to the same level as the San Diego Regional Water Quality Control Board has required of the Carlsbad facility, staff has estimated that the intake of sea water required for these plants would be 1.75 to 2.75 billion gallons per day (Exhibit E).

At 304 MGD, Poseidon's Carlsbad facility diverts less than 2 percent, and all of the planned and existing desalination facilities listed in the 2006 report would divert only about 14 percent, of the ocean water diverted by the state's coastal power plants. Thus, in the near future, the cumulative impingement and entrainment impacts of all anticipated desalination facilities are substantially less than the impact of the power plants.

However, the anticipated new 316(b) regulations adopted by both state and federal agencies and the trend towards repowering existing power plants with generating technology that does not rely on OTC is likely to reduce the impacts from power plants. For example, both the El Segundo power plant and the Cabrillo plant associated with the CDP, plan to reduce or eliminate OTC. Conversely, should the Poseidon desalination facility be successful, many more such facilities could be proposed and, in the long run, entrainment and impingement impacts from these facilities could surpass those of power plants.

Section 316(b) and the implementing regulations adopted by the US EPA and the State Water Resources Control Board apply only to power plants and not to desalination facilities. Technology developed to meet those regulations may also help reduce the entrainment and impingement impacts from desalination facilities. Several of the mitigation measures proposed by Commission staff to be included in the lease provisions and discussed below will require Poseidon to add future technology if it will reduce these impacts. However, recent informal conversations with State Board staff suggest that the 316(b) regulations now being drafted for the Board will focus on cooling towers and similar technology that will eliminate OTC altogether, rather than reduce its impacts. This technology would not be applicable to desalination facilities.

6) MITIGATION OF ENTRAINMENT AND IMPINGEMENT AT POSEIDON'S CARLSBAD FACILITY

As a condition in Poseidon's NPDES permit, Poseidon Resources is required to submit a Flow, Entrainment and Impingement Minimization Plan (Flow Plan) to the Water Board. This Flow Plan requires that Poseidon Resources submit a proposal for achieving the best technology available to minimize impacts to marine life. The Flow Plan will give the Water Board the ability to accept or reject mitigation measures offered by Poseidon Resources in response to potential operating impacts to marine life within the five-year period authorized by the NPDES permit that will expire October 1, 2011. The Board approved the Plan in April 2008 but major aspects of the plan were left to Board staff to determine, such as the total acreage of wetland mitigation.

On November 30, 2007, the California Coastal Commission considered and approved Poseidon's coastal development application for the subject project. Because the Commission approved modifications to the permit conditions, revised findings were prepared and adopted by the Coastal Commission on August 6, 2008. Through negotiations between Poseidon and Coastal Commission staff for the coastal development permit, the name of the Flow Plan was modified to be entitled the Marine Life Mitigation Plan.

The State Lands Commissioners asked that staff review Poseidon's Marine Life Mitigation Plan to determine if the plan provides adequate mitigation. There is little specificity in the plan. The plan amounts to a description of a process by which they will ultimately complete a plan. Therefore, it is difficult to make an adequacy determination at this time. Staff recommends that the lease require 55.4 acres of compensation of similar habitat located within San Diego or Orange counties, and that site-specific performance standards be developed for the release of the performance bond.

Poseidon has proposed to offset the impacts to marine life from impingement and entrainment at 37 acres, which is based on a 1:1 mitigation ratio and 50% confidence level. In prior actions by the California Coastal Commission on other projects, a 50% confidence level was allowed, as long as that number was increased by a greater than a 1:1 Mitigation ratio (e.g., 2 or 3:1). The California Coastal Commission hired an expert, Dr. Peter Raimondi, to evaluate Poseidon's calculations of the impingement and entrainment impacts (expressed as Area of Production Foregone) and to aid with setting an appropriate acreage for full compensation of impacts. Dr. Raimondi and the Coastal Commission staff stated that either an 80% confidence level be used to determine the acreage, or that the mitigation ratio be increased to deal with the high level of uncertainty inherent in a 50% confidence interval and in wetland mitigation in general. At the August 6, 2008, Coastal Commission hearing, Poseidon agreed to the 80% confidence level, which equates to 55.4 acres. Staff of the Commission concurs with this Coastal Commission decision and recommends the same level of compensation for our lease.

The total weight of organisms entrained by this project is 0.96 kg/day or 2.11 lbs/day. However, this represents about 96,000 individual organisms many of which are eggs and larvae. This translates to a yearly impact of 770 pounds or 35 million organisms. Over the expected 30 year life of the project, this correlates to over 23,000 pounds or over 1 billion organisms.

The projected cumulative capacity of desalination in the state of California from the nine existing facilities and the 19 currently proposed facilities (see Exhibit D, attached) is 290 million gallons per day. If these facilities are required to dilute the process water in the same ratio as the Poseidon facility (3:1), then the total process water would be over 1.7 billion gpd or over 620 billion gallons annually.

In light of the significant potential cumulative impacts of the desalination on the resources of the state, performance standards should be required to ensure that the mitigation produces the desired results. Concurrently, Poseidon has not found nor secured an appropriate location for wetland restoration and therefore it is difficult to write quantitative performance standards for an unknown type of wetland, in an unknown location. Staff recommends that, as part of the plan ultimately submitted according to the timelines in the lease amendment, performance standards be developed by Poseidon, approved by the Commission's Executive Officer, and that a performance bond for wetland mitigation be tied to these standards.

7) GREENHOUSE GAS EMISSIONS ASSOCIATED WITH THE PROJECT

The Final EIR certified by the City of Carlsbad was prepared prior to enactment of AB 32, which establishes a comprehensive greenhouse gas reduction program for California. Accordingly, that document did not include an analysis of greenhouse gas (GHG) emissions.

At the October 2007, meeting, the Commission directed staff to verify that Poseidon would meet is announced objective - that its project would be "carbon neutral". After extensive collaboration with staffs of the California Coastal Commission, California Energy Commission, and the California Air Resources Board regarding Poseidon's Energy Minimization and Greenhouse Gas Reduction Plan (formerly the Carbon Action Plan), it is the opinion of the Commission's staff that Poseidon's plan will not render the project carbon neutral as that term is normally understood.

To become truly carbon neutral, the plan would need to offset direct emissions generated during construction and operation including construction materials, transportation and equipment, as well as emissions generated indirectly through energy consumed during all aspects of the facilities operations. However, Poseidon proposal does not do this. Poseidon and the Commission's staff have come to an understanding of what Poseidon is proposing to offset, and that is the electricity consumption from on-going operation of the desalination plant, which is estimated to be at least 95% of the annual emissions associated with the plant. After considerable discussion with Poseidon and the aforementioned agencies, it was determined that "net carbon neutral for indirect energy consumed" is the most descriptive term for what Poseidon is proposing with respect to addressing GHG emissions.

Staff and Poseidon have agreed that the baseline for the annual accounting to determine the indirect carbon foot print to be offset will be based on the master meter reading for the facility multiplied by the most recent annual emissions factor, as posted on the California Climate Action Registry (CCAR) website, for San Diego Gas and Electric. That number will be expressed in metric tons. That number will likely be in the 90,000 range per year. Most, if not all, of the agencies with which staff is coordinating (CCAR, CARB, CEC, CCC) are following six criteria in regards to carbon offsets. Those criteria, as stated in AB 32 (Nunez, 2006), are the following: carbon offsets are "real," "permanent," "quantifiable," "verifiable," "enforceable," and are "in addition to" (what may be required under regulation).

Poseidon is proposing to use a number of offsets that are not easily measurable, quantifiable or verifiable. For example, Poseidon is proposing to use the reduced carbon foot print of a wastewater disposal and treatment plant. Poseidon claims that because of the high quality of the desalination water, the waste going

through the wastewater plant will be less salty and therefore will not need to be processed as much, thereby saving energy at the wastewater treatment plant. At best, this will be very difficult if not impossible to measure (quantify) and verify.

Another remaining issue that will affect Poseidon's ability to offset all of its indirect emissions fully is whether its largest proposed offset, reductions in deliveries from the State Water Project (SWP), would likely qualify as an offset. Poseidon is proposing to use the "indirect energy consumed" in delivering water from the SWP to offset a portion of the energy used to produce the desalination water. Simply stated, Poseidon's position is that the desalination water is replacing the SWP water, and therefore, Poseidon should be able to offset its carbon footprint by the carbon foot print of the SWP water. This position has been expressly supported by the California Air Resources Board (CARB), the California Energy Commission (CEC), MWD and other water districts that would benefit from Poseidon's project.

It has been argued, however, that the water from Poseidon's project will not replace SWP water, but will in fact be generated as additional water; that is Poseidon should not be given credit for reductions in GHG emission from the SWP because use of SWP water will not be reduced as a result of Poseidon's project. Neither the Department of Water Resources nor the Metropolitan Water District (MWD) has agreed to decrease their exports and imports, respectively, from the SWP by the 56,000 acre feet that Poseidon will produce. As noted in each of the local water agencies' long-term planning documents, none of the water agencies that have contracts to receive Poseidon's water are willing to give up any water rights. Therefore, a corresponding reduction in SWP water is not likely to result from operation of the desalination plant. Consequently, there will not likely be a reduction in greenhouse gasses from the importation of SWP water, and, in fact, regionally there will be an increase of greenhouse gases directly attributed to the desalination plants operation.

Poseidon has proposed that the question of replacement or additional water be viewed in the CEQA context, even though Poseidon's commitment to the Commission is not governed by CEQA. Baseline conditions, to which all impacts are compared in a CEQA document, are set at the time of the Notice of Preparation (NOP). Poseidon's argument is simply that the amount of energy that would have been used to supply the 56,000 acre-feet from the SWP to the San Diego Region sets the baseline for the emissions for the Poseidon desalination project. The energy consumed to deliver an acre-foot of water through the SWP at the time of the NOP was 3.4 KWh. Poseidon argues that the footprint of the SWP should be subtracted from the actual footprint of the desalination plant as it "replaces" 56,000 acre-feet of water with desalinated water. The carbon footprint of this water from the SWP is approximately 67,352

metric tons of CO_2. The footprint to produce 56,000 acre-feet of desalinated water is approximately 90,000 metric tons. Poseidon would like to subtract the SWP footprint from the desalination facility's footprint (90,000 metric tons minus 65,352 metric tons), leaving a net footprint of 22,648 metric tons. This is the baseline where Poseidon is proposing to begin to offset its project carbon footprint.

This argument, however, assumes that the project water will replace the SWP water in every year and that if the water was diverted to another end user, the CEQA process would require an evaluation by that new end user. First, the SWP will not decrease their exports based on the Poseidon desalination project, and MWD may not decrease its imports. Since MWD already has the rights to the SWP's 56,000 acre-feet, the water would not be classified as new water, and therefore, would not be evaluated in the CEQA arena for a new end user. The regional carbon footprint does not decrease with the addition of the desalination plant, in fact it will increase.

It should also be noted that MWD will subsidize $250 per acre foot up to $14,000,000 per year for water that replaces MWD water. Whether water from Poseidon's project should be considered "replacement water" therefore affects more than just the question as to the amount of GHG emissions that must be offset.

In order to resolve the issue as to whether all or some of the water produced by Poseidon's facility will replace SWP water, staff also considered the fact that MWD does not take all of its Table A water (the term for the water delivered to MWD under their allocation) from the SWP. To the extent that, if and when Poseidon's facility is operating, MWD does not need all of the SWP water to which it is entitled, then the desalinated water may be considered as replacing SWP water.

The table below provides the SWP data from 2000-2008 (courtesy of Ms. Gwen Knittweis, Chief of the Department of Water Resources', Water Delivery Analysis and Documentation Branch):

Metropolitan Water District of Southern California (MWD) Historical Deliveries and Unused Table A Amounts

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Contract Table A (acre-feet)	**2,011,500**	**2,011,500**	**2,011,500**	**2,011,500**	**2,011,500**	**1,911,500**	**1,911,500**	**1,911,500**	**1,911,500**
Water Year	**90%**	**39%**	**70%**	**90%**	**65%**	**90%**	**100%**	**60%**	**35%**
Total Deliveries (All Types)	1,551,992	1,093,451	1,333,927	1,672,019	1,724,380	1,478,045	1,512,186	1,515,038	
Table A Allocation (Contract X Water Year)	1,507,136	784,485	1,408,050	1,810,350	1,307,475	1,720,350	1,911,500	1,146,900	
Table A Delivered	1,270,258	686,545	1,190,348	1,418,081	1,145,746	1,197,183	1,103,538	1,047,046	
Carryover Spilled the Following Year*	0	2,060	46,607	0	3,853	71,468	201,902	0	
Unused Table A	**36,878**	**0**	**0**	**44,994**	**51,844**	**243,167**	**577,962**	**0**	**0**

*Carryover is limited by both storage and conveyance capacity for both MWD and SWP

As indicated in this table, MWD has not used all of its Table A water in five of the last nine years (55%). However, MWD has not used all of the Table A water in an amount equal to or greater than 56,000 acre-feet (the amount Poseidon will create) in only two of the last nine years (22%). In an additional three years, some Table A water was unused, but less than that to be produced by Poseidon. It would appear, then, that water availability from the SWP is highly variable; that in some years, Poseidon will provide replacement water and, in some years, it will be additional water.

Therefore, an appropriate calculation for allowing an offset that Poseidon could claim from the SWP would be based on the amount of unused acre-feet for any one year (up to a maximum of 56,000 acre-feet) then multiplied by the SWP emission factor for that year; that is, for the year 2000, Poseidon could claim 36,878 acre-feet of replacement water (the remaining 19,122 acre-feet [56,000 – 36,878] would be considered additional water). The replacement water would be multiplied by the SWP emission factor for that year, or approximately 22,998 tons of carbon offsets for the year 2000.

It should be noted, however, that in light of the current drought, climate change, and recent and anticipated legal decisions giving rise to reductions in SWP

exports from the Delta, MWD may be expected to take all of the SWP water that they can get in the foreseeable future.

Staff therefore does not recommend that the Commission accept the Poseidon plan as written. Rather, staff proposes that the Commission approve lease terms that use the established voluntary market to account for emissions from the project and required offsets and that the Commission's Executive Officer be the arbitrator of the amount of offset from the SWP allowed each year, based on the unused Table A water.

To meet the objective discussed by Poseidon at the Commission's October, 2007, meeting, Poseidon would also need to provide offsets for both direct and indirect emissions from the project. Staff calculates that the carbon footprint to be offset could be estimated as follows:

Description	Carbon produced in metric tons
All Construction related activities (estimate)	1320
Pipe Construction	7
Subtotal	1327

Description	Carbon produced in metric tons
Daily Operations	10
Energy consumption of facility	90,000
Subtotal	90,010
Total Construction & Operation:	91,337

If Poseidon is allowed to claim as carbon offsets the SWP emissions, estimated at approximately 67,352 metric tons, then Poseidon would need to offset the remaining 23,985 metric tons of carbon.

If Poseidon were to only buy renewable energy certificates (REC's) at the current rate ($5 - $20) this would equal between $119,925 and $479,700. If Poseidon were to choose to do other forms of offsets, the range could be much larger.

If the Commission accepts the "indirect energy consumed" definition for "carbon neutral" and Poseidon is allowed to use the SWP as an offset (67,352 metric tons), then the remaining carbon footprint would be 22,648 metric tons. Again, if only REC's were purchased ($5 - $20), the cost would be $113,240 - $452,960. If the SWP water offset is not allowed, the project would cost Poseidon an additional $336,760 to $1,347,040 each year.

Poseidon has proposed that the carbon accounting and offset measures be verified by a three-member committee, two of which would be representatives of Poseidon and the third being Poseidon's consultant. This proposal does not comply with basic principles addressing conflicts of interest and does not comport with the provisions of AB 32, which is that measurements of GHG emissions must be transparent and independently verified. Therefore, staff have drafted language into the lease amendment that state, "(t)he calculations conducted to ensure compliance with this provision of the lease amendment shall include accurate and transparent measurements and independent verification and shall be conducted in accordance with the procedures outlined by the CCAR, California Air Resources Board (CARB), or state-approved programs under the control of local air control districts." Processes ultimately adopted by CCAR and CARB may not allow Poseidon to claim reductions in SWP emissions as an offset, as it will not be "verifiable or additional," as stated in AB 32. Therefore, staff recommends that the final decision be delegated to the Commission's Executive Officer, as set forth in the proposed lease amendment.

At the Commission's meeting of October 30, 2007, staff was requested to work with Poseidon regarding differences in estimating the carbon footprint of the proposed Carlsbad desalination plant. Poseidon's estimate was substantially lower than that of CSLC staff. Representatives from Poseidon and CSLC staff met on November 7, 2007, to discuss the basis for the differences. The disparity revolves around development of the emission factor provided by San Diego Gas and Electric (SDGE) with respect to the carbon emissions associated with its energy purchases. SDGE developed its emission factors utilizing protocols developed by the California Climate Action Registry (CCAR).

During CSLC staff's consultation with staff at the California Energy Commission (CEC) and staff of the California Air Resources Board (CARB), both staffs have commented that the protocols provided by the CCAR, allow for considerable latitude by the reporting entity (in this case SDGE) in accounting for emissions. In addition, the "certification" for the emission factor provided by SDGE for their energy mix, is completed by "approved" consultants listed on the CCAR. These consultants use the information provided by the entity who hires them. This "certification" is voluntary, does not have the benefit of regulatory overview, has a wide degree of latitude for accounting emissions, and has no associated penalties for poor accounting practices. Forthcoming regulations will have less latitude than those currently used by the CCAR to estimate emission factors. Therefore, as a result of CSLC staff's consultation with CEC and CARB, the 546 pounds of CO_2 per MWH were found to be a low estimate.

At the Commission's October 30, 2007 meeting, Poseidon agreed to consult with CARB, the CEC, and the California Climate Action Registry (Registry), to obtain

a third-party review and recommendation on Poseidon's CAP. Poseidon's desalination project is not anticipated to be completed until the last quarter of 2010, which would give the Commission an opportunity to evaluate Poseidon's Plan approved by the California Coastal Commission prior to Poseidon's operation of the desalination plant.

Finally, in order to address instability and volatility in the GHG emissions offset market, Poseidon proposes that it be permitted to deposit funds into an escrow account if it is determined that the markets for RECs are too volatile or excessive in c costs. This would be in lieu of the provision that would otherwise operate; i.e., where under Poseidon would be required to purchase RECs sufficient to mitigate GHG emissions not otherwise addressed. In the event that this escrow provision is put into operation during such period of volatility, Poseidon proposes that the amount it would be required to deposit in that event would be $10 per ton of carbon. However, Poseidon proposes that it would then not be required to pay additional amounts beyond that $10 per ton for the period in which it makes deposits into escrow. Poseidon contends that, under current market conditions, RECs are available from between $6 and $12 per ton and that the fact that market rates may exceed $10 per ton would not, in and of itself, be evidence of volatility or excess sufficient to bring this provision into operation. Therefore Poseidon admits that, ordinarily, it may frequently be paying more than $10 per metric ton for RECs. However, staff has found the market generally available to Poseidon at this time provides offsets from $5 to $20, that the offsets most readily available cost at least $12 per ton, that the market price in places such as Europe are substantially higher and that there is little likelihood that $10 per ton would in the future be considered a reasonable amount needed to acquire RECs. Given the disparity between current and anticipated market rates and Poseidon's proposal, staff cannot recommend adoption of the proposal.

8) REPOWERING OF THE CABRILLO POWER PLANT

On September 14, 2007, the Carlsbad Energy Center LLC (an indirect wholly owned subsidiary of NRG Energy, Inc. which also owns Cabrillo Power I, LLC) submitted an application to the California Energy Commission for certification to develop a 558 megawatt gross combined-cycle thermal power plant at the Encina Power Station in the city of Carlsbad. This project would close Units 1, 2, and 3 OTC power units utilized by the Cabrillo power plant and install new generators that utilize a "closed cycle" cooling system. This system would use a cooling tower, reclaimed water, and potable water supplied by the city of Carlsbad instead of the existing seawater intake and discharge channels authorized by the Commission. Units 4 and 5 would continue to be operated by Cabrillo on an "as needed" basis by contract with the California Independent System Operator. These units would continue to need OTC in order to operate.

Prior to certification of the EIR for this project, the city of Carlsbad provided a response to public comments addressing the issue of Poseidon's operation of Cabrillo's intake structures during periods when Cabrillo would not be operating the intake or discharge of seawater for the purpose of generating electrical power. Carlsbad's FEIR analysis concluded that operation of the desalination facility without the power plant would not generate significant impacts. Therefore, the FEIR addressed the consequences of the discontinuance of the use of OTC by the power plant that may occur as a result of the repowering. In fact, operation of the OTC facilities by the power plant during the first six months of 2007 averaged 124 MGD, much less than will be required by the desalination facility.

On November 15, 2007, the California Coastal Commission considered the Coastal Development Permit for the Poseidon Desalination Project. The Coastal Commission approved the desalination project subject to conditions of approval. Two of the most significant conditions include preparation of a comprehensive Climate Action Plan and Marine Life Mitigation Plan for consideration by the Coastal Commission prior to issuance of the Coastal Development Permit.

C) OTHER PERTINENT INFORMATION:

Poseidon Resources has agreed to provide a Performance Deposit in the amount of $1,000,000 in addition to the $500,000 bond already posted by Cabrillo that will ensure the financial wherewithal to accomplish restoration of the lease premises in the event that the facilities are no longer being used and to ensure compliance with all of the terms of the lease. This includes removal of the jetties at the mouth of the Agua Hedionda Lagoon and at the outfall channel. Additionally, a parent guaranty will be provided by Poseidon Water LLC to ensure Poseidon Resources' compliance with the terms of the lease.

Poseidon Resources must provide the Performance Deposit and parent guaranty prior to commencement of construction. The amendment will not be executed by Lessor until after those items are provided.

Commission staff has received many letters of support for favorable consideration of the proposed desalination project from a variety of sources including, but not limited to, local interest groups, members of the California Legislature, various water districts and water agencies, water-dependent businesses operating in Agua Hedionda Lagoon, local homeowner's associations, union representatives, and various San Diego city and county businesses and administrative entities.

In addition, Commission staff has received approximately 1,575 e-mails from the general public in opposition to the project and requesting that the project be fully mitigated as well as letters of opposition from the Coast Law Group, attorneys representing the Surfrider Foundation and the San Diego Coast Keeper, indicating that a new EIR or supplemental EIR is necessary as previous environmental documents relied on a more consistent OTC operational water flow. They suggest that the proposed desalination plant cannot rely consistently on water from OTC; therefore, a subsequent EIR should consider whether the desalination plant should intake or discharge ocean water into state tidelands at all.

On June13, 2006, the City of Carlsbad, acting as Lead Agency under CEQA, certified EIR 03-05 (SCH#2004041081) and a Mitigation Monitoring Program for the proposed project. The CSLC staff has reviewed such document and Mitigation Monitoring Program adopted by the lead agency. The CSLC will be acting as a Responsible Agency under CEQA and, as such, must generally use the EIR certified by the Lead Agency. Section 15162 of the CEQA Guidelines provides the only criteria under which a Responsible Agency may prepare a subsequent or supplemental EIR, and those relate essentially to major changes in the project or in the circumstances under which the project is built or to address new information of substantial importance. In this case, EIR 03-05 did address impacts in the event that the power plant no longer needed cooling water and that the proposed desalination project is to draw directly all the seawater it needs. Preparation of a supplemental or subsequent EIR would therefore not appear to be permitted under Section 15162 of the CEQA Guidelines.

Additionally, the California Coastal Commission prepared a Coastal Development Permit for this project that received final approval of the findings and conditions on August 6, 2008. The California State Lands Commission staff has reviewed such documents and Mitigation Monitoring Program adopted by the lead agency.

Findings made in conformance with the State CEQA Guidelines (Title 14, California Code of Regulations, Section 15091 and 15096) are contained on file in the Sacramento Office of the California State Lands Commission.

A Statement of Overriding Considerations made in conformance with the State CEQA Guidelines (Title 14, California Code of Regulations, Section 15093) is contained on file in the Sacramento Office of the California State Lands Commission.

This activity involves lands identified as possessing significant environmental values pursuant to Public Resources Code sections 6370, et seq. Based upon

the staff's consultation with the persons nominating such lands and through the CEQA review process, it is the staff's opinion that the project, as proposed, is consistent with its use classification.

APPROVALS OBTAINED:

City of Carlsbad, the California Regional Water Quality Control Board, the California Coastal Commission (conditionally), and the Department of Health Services

EXHIBITS:

A. Site and Location Map
B. Table 1 - Assessment, Reduction and Mitigation Of Indirect GHG Emissions
C. Table 2 – All Subsequent Years
D. Existing and Proposed Desalination Plants in California as of August 2008
E. Table of Entrainment Impacts of California Power Plants
F. Amendment of Lease PRC 8727.1

RECOMMENDED ACTION:
IT IS RECOMMENDED THAT THE COMMISSION:

CEQA FINDING:

FIND THAT AN EIR SCH# 2004041081 WAS PREPARED FOR THIS PROJECT BY THE CITY OF CARLSBAD AND CERTIFIED ON JUNE 13, 2006, AND THE CALIFORNIA COASTAL COMMISSION APPROVED A COASTAL DEVELOPMENT PERMIT ON AUGUST 6, 2008, AND THAT THE COMMISSION HAS REVIEWED AND CONSIDERED THE INFORMATION CONTAINED THEREIN.

ADOPT THE FINDINGS MADE IN CONFORMANCE WITH TITLE 14, CALIFORNIA CODE OF REGULATIONS, SECTIONS 15091 AND 15096 (h), AS CONTAINED ON FILE IN THE SACRAMENTO OFFICE OF THE CALIFORNIA STATE LANDS COMMISSION.

ADOPT THE MITIGATION MONITORING PROGRAM, AS CONTAINED ON FILE IN THE SACRAMENTO OFFICE OF THE CALIFORNIA STATE LANDS COMMISSION.

ADOPT THE STATEMENT OF OVERRIDING CONSIDERATIONS MADE IN CONFORMANCE WITH TITLE 14, CALIFORNIA CODE OF REGULATIONS, SECTION 15093, AS CONTAINED ON FILE IN THE SACRAMENTO OFFICE OF THE CALIFORNIA STATE LANDS COMMISSION.

SIGNIFICANT LANDS INVENTORY FINDING:

FIND THAT THIS ACTIVITY IS CONSISTENT WITH THE USE CLASSIFICATION DESIGNATED BY THE COMMISSION FOR THE LAND PURSUANT TO PUBLIC RESOURCES CODE SECTIONS 6370, ET SEQ.

AUTHORIZATION:

AUTHORIZE THE AMENDMENT OF LEASE NO. PRC 8727.1, A GENERAL LEASE – INDUSTRIAL USE, IN SUBSTANTIAL FORM AS FOUND ON EXHIBIT "F", ATTACHED, OF LANDS SHOWN ON EXHIBIT A ATTACHED AND BY THIS REFERENCE MADE A PART HEREOF, EFFECTIVE AUGUST 22, 2008; ALL OTHER TERMS AND CONDITIONS OF THE LEASE WILL REMAIN IN EFFECT WITHOUT AMENDMENT.