Click here to go
to a combined addendum
for items W4a, W5a and W5b.

W 5a

ADDENDUM TO COMMISSION PACKET

FOR

ENERGY, OCEAN RESOURCES and

FEDERAL CONSISTENCY

For Wednesday, August 6, 2008

Item No. W 5a **E-06-013**
(Condition Compliance)
Poseidon Resources (Channelside) LLC

- Applicant's Submittal

CALIFORNIA COASTAL COMMISSION
45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105- 2219
VOICE AND TDD (415) 904- 5200
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W5a

August 5, 2008

TO: Coastal Commissioners and Interested Parties

FROM: Alison J. Dettmer, Deputy Director
Tom Luster, Staff Environmental Scientist

SUBJECT: Addendum to E-06-013 Condition Compliance Report for proposed *Energy Minimization and Greenhouse Gas Reduction Plan* – Poseidon Resources (Channelside) LLC – Carlsbad Desalination Facility

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This addendum includes two applicant submittals related to the above-referenced condition compliance item. Commissioner *ex parte* forms and correspondence received related to this item are included in a separate packet containing all *ex parte* forms and correspondence for Items W4a, W5a, and W5b, all of which apply to this proposed project.

Tom Luster

From: David.Goldberg@lw.com

Sent: Thursday, July 31, 2008 2:29 PM

To: Tom Luster

Cc: pmaclaggan@poseidon1.com; Rick.Zbur@LW.com; DJ.Moore@lw.com

Subject: Poseidon - Proposed Revisions to Energy Minimization and Greenhouse Reduction Plan in Response to Staff Report

Tom:

We are attaching a redlined version of Poseidon's Energy Minimization and Greenhouse Reduction Plan, which contains modifications to its July 3, 2008 version in response to issues raised in the Commission Staff's July 24, 2008 Staff Report. For your convenience, we have annotated the changes in the margin of the document to indicate the nature of the changes. The changes are broken down into the following three categories:

Category 1. Changes agreed to by Poseidon and Staff prior to the issuance of the Staff Report, which are either specifically reflected in Staff's Memo to File dated July 24, 2008 attached to the Staff Report ("Memo to File") or are consistent with the concepts agreed to in that Memo to File. This category also includes a handful of minor clean-up edits.

Category 2. Changes which Poseidon had understood were agreed with Staff prior to the issuance of the Staff Report through correspondence that preceded issuance of the Memo to File, which are neither included in the Memo to File nor reflected in the Staff Report.

Category 3. Changes made to address issues raised in the Staff Report or where open issues remain between Poseidon and Staff.

(Please note that on pages 2 and 11 of the document, the redlining program superimposed a couple figures over text. In neither case, however, are there any changes to the text of the document.)

Please let us know if you have any questions regarding the document. We look forward to discussing these issues with you on our call tomorrow.

Thanks,

David
<<Poseidon - Energy Minimization & Greenhouse Reduction Plan Redline.pdf>>

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POSEIDON RESOURCES

August 2, 2008

Agenda Item
W 5a

VIA OVERNIGHT DELIVERY

Chairman Kruer and Honorable Commissioners
California Coastal Commission
North Central Coast District
45 Fremont, Suite 2000
San Francisco, CA 94105-2219

Re: Carlsbad Desalination Project CDP Application No. E-06-013
Energy Minimization and Greenhouse Gas Reduction Plan

Dear Chairman Kruer and Honorable Commissioners:

On behalf of Poseidon Resources (Channelside) LLC ("Poseidon"), this letter responds to the Coastal Commission Staff Report dated July 24, 2008 regarding Poseidon's proposed Energy Minimization and Greenhouse Gas Reduction Plan dated July 3, 2008 ("GHG Plan" or "Plan") submitted pursuant to Special Condition 10 of the above-referenced Coastal Development Permit ("Permit") for the Carlsbad Seawater Desalination Facility (the "Project"). The GHG Plan is scheduled to be considered by the Commission at its August 6, 2008 Meeting.

Poseidon's GHG Plan represents an unprecedented voluntary commitment to account for and bring to zero net indirect GHG emissions from the Project. While Poseidon supports Staff's recommendation that the Commission approve the Plan, Poseidon does not support Staff's recommended modifications to the Plan, which Poseidon believes exceed its voluntary commitment to offset its "net" indirect carbon impact, are contrary to California law and State climate change policy, unnecessary to ensure consistency with the Coastal Act, and would place an excessive economic burden on the Project. Staff's recommendations are premised on a fundamental misapplication of The Global Warming Solutions Act of 2006 ("AB 32") to the Project (which does not place any "requirement" on the Project), which would not allow emission credit from substantial Project benefits, such as avoided GHG emissions from displacing 56,000 acre-feet per year ("AFY") of imported water, and the wetland restoration project Poseidon will undertake and fund. Adoption of Staff's recommendation would double the cost of implementing Poseidon's GHG Plan from approximately $61 million to approximately $121 million or more.

Poseidon therefore requests that the Commission not adopt Staff's recommended modifications to the Plan and instead adopt Poseidon's Plan, as modified by Exhibit A attached

Poseidon Resources Corporation
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619-595-7802 Fax: 619-595-7892
Project Office: 4600 Carlsbad Boulevard, Carlsbad, CA 92008

hereto, for the reasons summarized below and described more fully in its "Response to Staff Report," attached hereto at Exhibit B.

I. UNPRECEDENTED VOLUNTARY COMMITMENT THAT EXCEEDS COASTAL ACT REQUIREMENTS

In October 2007, Poseidon made public its voluntary commitment to account for and reduce to zero the Project's net indirect GHG emissions and put forth a draft of the Plan to assure that this objective will be achieved over the 30-year life of the Project. Poseidon's voluntary commitment was memorialized in connection with the Commission's approval of the Permit in November 2007,[1] and is made enforceable through Special Condition 10, which requires that the Commission approve a revised Plan prior to the issuance of the Permit.

Poseidon's GHG Plan has been developed in consultation with, and incorporates input from, a multitude of State, regional and local agencies, including the Coastal Commission, State Lands Commission, California Energy Commission, California Air Resources Board, California Department of Forestry, California Department of Park and Recreation, the San Diego Air Pollution Control District, the South Coast Air Quality Management District, and various agencies in the San Diego region. The Plan has also been reviewed by the California Center for Sustainable Energy, an independent third party responsible for implementing elements of the Plan.

On July 3, 2008, Poseidon submitted its proposed GHG plan in satisfaction of Special Condition 10. Since that time, Poseidon has worked closely with Commission Staff to address a number of Staff's concerns with the Plan. As a result of those productive discussions, Poseidon and Staff have agreed to a number of modifications to the Plan, which are set forth at Exhibit A. Nevertheless, four key differences remain between Poseidon's Plan and Staff's recommendation, which are discussed in Section III below and more fully at Exhibit B. Poseidon requests that the Commission approve its Energy Minimization and Greenhouse Gas Reduction Plan as revised and modified pursuant to Exhibit A attached hereto.

II. POSEIDON'S PLAN ENSURES THE PROJECT'S NET GHG EMISSIONS WILL BE COMPLETELY OFFSET

The Project does not emit any GHG emissions and therefore, AB 32 does not impose, and is not anticipated to impose in the near future, any "requirement" on the Project. AB 32 instead regulates direct emitters such as SDG&E, the source of the Project's electricity. Nevertheless, Poseidon has committed not only to implement energy efficiency measures to ensure Coastal Act consistency but goes significantly beyond Coastal Act requirements to offset all of the Project's net indirect carbon emissions and to ensure that those offsets are consistent with AB 32 principles for voluntary offsets. The Plan includes the following robust and enforceable measures to ensure that the Project's net GHG emissions reductions will be certain, verified and reduced to zero:

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[1] *See* Poseidon Resources, November 9, 2007 Response to Staff Report, Exhibit D.

- **State of the art on-site energy minimization measures** costing approximately **$55 million.**

- **On-site solar power generation** (if expected to provide a return on capital investment over the life of the Project).

- **$1 million toward reforestation** of areas in San Diego County impacted by the 2007 wildfires.

- Application of **CCAR/CARB methodology** to determine GHG emissions.

- Purchase of offsets/RECs sufficient to **zero out the Project's net indirect GHG emissions**.

- **Offsets required to be consistent with AB 32 principles for voluntary offsets** and purchased through independent third party providers who will verify that the offsets are real and meet Plan requirements.

- **Annual Reports to the Commission**, which demonstrate that the Project meets its offset requirements.

III. KEY DIFFERENCES BETWEEN POSEIDON'S PROPOSAL AND STAFF'S RECOMMENDATION

While Poseidon has worked hard to resolve several of Staff's issues with Poseidon's GHG Plan, four key differences remain. These issues, which are summarized below, include recommendations by Staff that would: (1) incorrectly apply AB 32 criteria to all of the Project's benefits (including GHG emissions that are already included in its "baseline"), resulting in a requirement that Project offset its "gross", rather than "net", GHG emissions; (2) severely limit the availability of offsets to projects verified by CCAR and/or CARB and registered in the Climate Action Reserve ("CAR"), which amount to less than 1% of the domestic carbon offset market; (3) eliminate necessary and appropriate contingency plans to ensure that emissions reductions are being addressed during market dysfunction; and (4) prohibit Poseidon from opting into new government carbon offset programs as they become available.

A. Staff's Recommendation Would Require the Project to Offset its "Gross" Rather than "Net" GHG Emissions

Staff's recommendation would require the Project to offset its "gross" indirect GHG emissions from its electrical usage, without any credit for emissions reductions resulting from Project features and Project-related benefits, including, most notably, emissions reductions resulting from the Project's replacement of 56,000 AFY of water that would otherwise be imported from the State Water Project to the Project's customers in the San Diego region. As discussed below, requiring "gross" offsets would increase the cost of the Plan's carbon offset requirement from $6 million to $27 million.

- **Imposing an Offset Requirement that Exceeds Poseidon's Voluntary Commitment Would Violate the Coastal Act.** The Coastal Act authorizes the

Commission to require that the Project "minimize energy consumption and vehicle miles traveled," and ensure consistency with "requirements imposed by an air pollution control district or [CARB] as to each particular development", but it may not "establish any ambient air quality standard or emissions standard, [or an] air pollution control program or facility . . ." Coastal Act §§ 30253(4), 30253(3), 30414(a). The Project is consistent with Coastal Act §30253(4) requiring it to minimize energy consumption through its $55 million of on-site state-of-the-art energy minimization features. However, imposing an offset requirement beyond Poseidon's voluntary commitment to offset its net emissions violates § 30253(3) because, as discussed further below, AB 32 established that regulation of GHG emissions constitutes an air pollution control program and gave exclusive authority over adoption and enforcement of that program to CARB, and neither CARB nor SDAPCD have adopted such a program that applies to the Project. Moreover, imposing such a requirement would also violate §30414(a) by attempting to establish an air pollution control program.

- **Imposing an Offset Requirement that Exceeds Poseidon's Voluntary Commitment Would Violate AB 32, the Health and Safety Code and the Administrative Procedures Act.** AB 32 establishes that the regulation of GHG emissions is an air pollution control program and gives CARB exclusive rulemaking authority over the implementation and enforcement of that program. Contrary to the Staff Report, CARB has not yet promulgated any requirements applicable to indirect emitters, such as the Project, nor has it adopted the anticipated programs governing voluntary offsets. Further CARB's June 2008 Discussion Draft of its "Climate Change Draft Scoping Plan" does not anticipate that regulations applicable indirect emitters will be adopted in the near future, but instead focuses on regulations of direct emitters (which the Project is not) and incentives for voluntary reductions by indirect emitters. CARB's rule-making process will require public review and comment of the proposed regulations and require CARB to adopt certain findings that, among other things, the regulations are "cost-effective," "feasible" and "equitable." Health & Safety Code §38562; Government Code § 11340-11365. Therefore, adopting Staff's recommendation and subjecting Project features and related benefits, such as displacing imported water and the wetlands restoration, to AB 32's principles for voluntary offsets, misapplies principles to Poseidon that are applicable to CARB's regulatory authority, usurps CARB's rulemaking authority, deprives Poseidon the protections afforded by the rulemaking process, and imposes an emissions requirement that CARB has not adopted or determined satisfies the findings required under the Health & Safety Code.

- **Requiring "Gross" Offsets is Inconsistent with CEQA Principles and State Climate Change Policy.** Under CEQA principles and State climate change policy, the Project's impacts must be analyzed by determining the net change in GHG emissions relative to existing conditions, or the "baseline", factoring in both increases and decreases in emissions caused by the Project, including Project features that result in the reduction of another entity's energy use, or Project features that result in the sequestration of carbon. It is therefore appropriate for the GHG Plan to subtract

from the Project's indirect GHG emissions the Project features and Project-related benefits, such as the wetlands restoration provided by the Project and displacing imported water.

Importantly, the Project will produce 56,000 AFY of desalinated water that will directly replace, on a one-for-one basis, water that would have been imported to the Project's customers from the State Water Project. The MWD has agreed to subsidize the purchase of Project water at $250 per acre foot ($14 million per year). **To receive the subsidy, MWD requires the water agencies receiving the water to "demonstrate that the water offsets an equivalent amount of water imported from [MWD].**" *See* letter from the General Manager of MWD, dated July 29, 2008, attached hereto at Exhibit D. Because the Project replaces water for existing uses in San Diego County, energy used to supply water to those uses today is part of the "baseline." Therefore, when assessing the Project's GHG impacts, energy that would have been used to import water replaced by the Project therefore must be subtracted from the energy used by the Project, and it is appropriate to net out the Project's avoidance of GHG emissions associated with replaced water.

- **Requiring "Gross" Offsets Is Inconsistent with Constitutional "Nexus" Requirements.** Public agencies may not constitutionally impose conditions on development unless there is a "nexus" between the condition and the project's environmental impact. In this case, there is no nexus for requiring Poseidon to offset GHG emissions that may result at some uncertain point in the future should the water that Poseidon is displacing be imported for new or expanded uses that are unrelated to the Project.

- **A Gross Offset Requirement Would Result in "Double-Mitigation".** If any of the 56,000 AFY of water replaced by the Project is ultimately imported to the region for hypothetical new or expanded uses unrelated to the Project, CEQA and State climate change policy would address those associated impacts. Under Staff's logic, for example, a project proposing water conservation measures, such as low-flow toilets or on-site water recycling, would be required to mitigate impacts that would result from another hypothetical project consuming that foregone water. Requiring Poseidon *and* the new water users to mitigate such impacts would substantially increase the costs of desalination, reduce its viability and constitute poor public policy.

B. Staff's Recommendation Would Dramatically and Artificially Restrict Access to the Carbon Offset Market

Staff's recommendation would limit Poseidon to acquiring GHG emissions offsets from only a handful of projects verified by CCAR or CARB and registered in the Climate Action Reserve. As of now, CCAR has only three protocols – livestock/dairy, landfill, and reforestation – and only three other protocols in progress, which take years to develop and approve. Staff's recommendation would therefore severely and artificially constrain the availability of carbon offsets by limiting Poseidon to just 0.16% of the domestic market, provide no flexibility to

respond to an emerging and maturing marketplace, and could result in an unavailability of offsets sufficient to achieve the goals of the GHG Plan.

Poseidon is committed to acquiring the necessary offsets from CCAR and/or CARB exclusively to the extent these entities have offsets that are both available and affordable. Poseidon has demonstrated this commitment by having recently become a member of the CCAR. However, at present, the available offset projects verified by CCAR and/or CARB and registered in the CAR are limited and the future availability and affordability of offsets offered by these entitles is uncertain. This uncertainty raises questions regarding the workability of staff's recommendation.

In response to Staff's recommendation, Poseidon has proposed that, in addition to acquiring offsets from/through CARB and CCAR, it be permitted to acquire offsets from/through additional respected third party providers that are members of the Offset Quality Initiative, which today include The Climate Trust, Environmental Resources Trust and The Climate Group/Voluntary Standard. Poseidon has also proposed that additional third party providers could be added later, subject to Executive Director approval, provided that they are independent and non-affiliated entities that adhere to substantially similar principles and evaluation criteria for high quality offsets as these other providers. We believe that this modification provides the necessary assurances that Poseidon's offsets will be certain, verifiable and consistent with AB 32 principles for voluntary offsets.

C. Staff Recommends Elimination of a Contingency for Market Dysfunction

Staff's recommendation would eliminate a contingency plan proposed by Poseidon to address potential dysfunction in the carbon offset market. The offset market is new and unpredictable. If offsets are not reasonably available, and if no contingency plan is provided, Poseidon could be violation of Condition 10 through no fault of its own. Poseidon has therefore proposed that in the event of market dysfunction, as defined in the GHG Plan, and after Executive Director approval, Poseidon may pay into an escrow fund, in lieu of acquiring offsets, in amount equal to $10 per metric ton (plus inflation) for each ton not previously offset. Monies paid into the escrow fund would be spent on offsets as they became available.

In response to Staff's concerns that Poseidon would be permitted to unilaterally forego mitigation when it deems market conditions to be unfavorable and that the Plan does not identify how the escrow funds would be used or who would decide their use, Poseidon has proposed further revisions to its Plan, as set forth in Exhibit A, which require: (i) an Executive Director determination concurring that a market dysfunction exists, as well as approval of the escrow account, before Poseidon may utilize the contingency plan; (ii) and that Poseidon submit a plan for Executive Director review and approval within 180 days of the determination that sets forth how the escrow funds will be spent on offset projects.

D. Staff's Recommendation Prohibits Opting into New Government GHG Offset Programs that May Become Available

Staff's recommendation also would not permit the flexibility for Poseidon to satisfy the requirements of the GHG Plan by opting into a GHG offset or other mitigation program, which

may in the future be developed by SDAPCD, SCAQMD, CARB, SDG&E or any other similar government agency, in lieu of purchasing carbon offsets. Poseidon has proposed that this flexibility be provided to ensure that, all times, the most efficient means for offsetting the Project's net GHG emissions are being undertaken.

E. Staff's Recommendations Would Impose an Excessive Economic Burden on the Project

Staff's recommendations that require Poseidon to offset its gross emissions and to artificially constrain its purchase of offsets would impose an excessive economic burden on the Project, which would be compounded by Staff's prohibition on any contingency plan in the event of market dysfunction or flexibility to participate in new government offset programs. These recommendations would be wholly inconsistent with AB 32, which as discussed above requires that regulations promulgated thereunder regulate GHG emissions in a manner that is "cost-effective", "feasible" and "equitable".

The Project is estimated to cost approximately $300 before mitigation costs. Current mitigation costs arising from Coastal Commission review are estimated at $90 million, including $55 million for state of the art energy minimization features, $6 million for "net" carbon offsets, and $29 million for the Marine Life Mitigation Plan. These costs are in addition to significant mitigation costs already imposed on the Project by the City of Carlsbad during its review of the Project. By requiring "gross" offsets, Staff's proposal would increase the cost of the Plan's carbon offset requirement from $6 million to $27 million. Additionally, Staff's proposal to restrict the carbon offset market to CCAR-verified credits would severely limit the availability of offsets, and could increase carbon offset costs by 2.5 times or more, increasing the cost of the gross offset requirement to $66 million or more. Combined, these two components of Staff's recommendation would increase the costs of the GHG Plan from approximately $61 million to $121 million, or more, raising the Commission-imposed mitigation costs for the Project from approximately $90 million to $150 million. These costs would represent an unprecedented mitigation requirement, far in excess of Poseidon's voluntary commitment to offset its net indirect emissions.

IV. PUBLIC AGENCIES WITH PRIMARY JURISDICTION OVER ENERGY AND WATER SUPPLY SUPPORT POSEIDON'S PROPOSALS

The California Energy Commission and MWD have each publicly supported elements of Poseidon's GHG Plan, as evidenced by the letters from these agencies to the Commission attached hereto at Exhibits C and D, respectively.

- **California Energy Commission** supports Poseidon's plan to mitigate its net carbon emissions, i.e., to "***mitigate the carbon emissions from the increases in electricity required to deliver the project's water to customers, as compared with the 'baseline' of current electricity required to serve those customers with State Water Project water***," which is "***consistent with how the Energy Commission, itself, analyzes the significance of impacts under CEQA . . .***"

- **Metropolitan Water District** confirms that "***water agencies receiving desalinated supplies from the Project must demonstrate that the water offsets an equivalent amount of water imported from Metropolitan***," and that it is therefore "***appropriate for the Project's GHG Plan to be based on offsetting net carbon emissions because San Diego County will use 56,000 acre-feet per year less imported water upon Project start up***."

We appreciate the Commission's consideration of these important issues and respectfully request that the Commission approve Poseidon's proposed Energy Minimization and Greenhouse Gas Reduction Plan at its August 6, 2008 meeting.

Sincerely,

Peter MacLaggan
Poseidon Resources

Attachments

cc: Tom Luster;
Rick Zbur, Esq.

POSEIDON RESOURCES

Agenda Item
W 5a

EXHIBITS TO POSEIDON'S AUGUST 2, 2008 RESPONSE TO STAFF REPORT REGARDING THE ENERGY MINIMIZATION AND GREENHOUSE GAS REDUCTION PLAN

Exhibit A	Energy Minimization and Greenhouse Gas Reduction Plan
Exhibit B	Response to Staff Report
Exhibit C	Letter from California Energy Commission
Exhibit D	Letter from Metropolitan Water District

These materials have been provided to California Coastal Commission Staff

EXHIBIT A

EXHIBIT A

Poseidon's Revisions to Energy Minimization and Greenhouse Gas Reduction Plan

Attached hereto is an updated version of Poseidon's Energy Minimization and Greenhouse Reduction Plan (the "Plan"), which is marked to reflect modifications made to its July 3, 2008 version in response to issues raised in the Commission Staff's July 24, 2008 Staff Report. Annotations are provided in the margin of the document both to indicate the nature of the modifications and areas of remaining disagreement between Poseidon and Staff, which require resolution by the Commission. The annotations are broken down into the following three categories:

Category 1. This category indicates changes agreed to by Poseidon and Staff prior to the issuance of the Staff Report, which are either specifically reflected in Staff's Memo to File dated July 24, 2008 attached to the Staff Report ("Memo to File") or are consistent with the concepts agreed to in that Memo to File. Category 1 also includes certain minor typographical and syntax related edits.

Category 2. This category indicates changes that Poseidon had understood were agreed with Staff prior to the issuance of the Staff Report through correspondence that preceded issuance of the Memo to File, which are neither included in the Memo to File nor reflected in the Staff Report. This category primarily includes changes relating to the accounting of Poseidon's emissions balances, most notably permitting Poseidon to maintain its zero net balance over a 5 year rolling average following its first five years of operation (and five year period thereafter). By allowing Poseidon to carry excess credits forward into future years, Poseidon would be incentivized to acquire excess credits early, resulting in a greater likelihood of over-mitigation.

Category 3. This category indicates changes made to address issues raised in the Staff Report, as well as areas in which open issues remain between Poseidon and Staff. The Category 3 changes include 4 sub-categories:

- **A: Gross v. Net Offsets.** The Plan continues to reflect Poseidon's voluntary commitment to offset its "net" indirect GHG emissions. This is reflected in Part II of the Plan (On-Site and Project-Related Reduction of GHG Emissions), which has not been modified to incorporate Staff's recommendation that these project features be subject to AB 32 principles for voluntary offsets.

- **B: Third Party Acquisition and Verification.** This sub-category incorporates Staff's recommendation that the Plan be revised from its initial formulation in which a committee was selected to review and verify offset acquisition, to a structure where offsets are acquired from/through CCAR or CARB. In addition to incorporating Staff's recommendation, sub-category B also includes Poseidon's proposed modification to that structure, which would expand the scope of available offsets to include those provided by a select group of third party providers that are members of the Offset Quality Initiative.

- **C: Contingency Plan.** This sub-category includes modifications to Poseidon's proposed contingency program in the event of offset market dysfunction in response to concerns raised in the Staff Report.

- **D: Opt-in to new government offset programs.** This sub-category includes Poseidon's proposal that it be permitted the flexibility to opt-in to new government GHG offset programs as they become available.

CARLSBAD SEAWATER DESALINATION PROJECT

ENERGY MINIMIZATION
AND
GREENHOUSE GAS REDUCTION PLAN

JULY ~~3~~30, 2008

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Appendix E – Poseidon Resources'/ Water Agencies' Letters to SLC Re: Project's Impact on Imported Water Use, November 8, 2007
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Appendix G – Examples of Offset Projects
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CARLSBAD SEAWATER DESALINATION PROJECT

ENERGY MINIMIZATION AND GREENHOUSE GAS REDUCTION PLAN

JULY ~~3~~30, 2008

INTRODUCTION

In October 2007, Poseidon Resources (Poseidon) made public its voluntary commitment to account for and bring to zero the net indirect Greenhouse Gas (GHG) emissions from the Carlsbad Desalination Project (Project). Poseidon followed its unprecedented commitment with the development of a Climate Action Plan (CAP), Poseidon's roadmap to achieving its commitment over the 30-year life of the Project. Based on protocols adopted by the California Climate Action Registry (CCAR), the CAP was reviewed by the California Coastal Commission (CCC), the California State Lands Commission (CSLC), the California Air Resources Board (CARB) and, at the request of a Coastal Commissioner, the South Coast Air Quality Management District (SCAQMD).

On November 15, 2007, the CCC approved the Project subject to the condition, among others, that the CCC approve the CAP at a subsequent hearing. Specifically, Special Condition 10 states that "prior to issuance of the permit, the Permittee shall submit to the Commission a Revised Energy Minimization and Greenhouse Gas Reduction Plan that addresses comments submitted by the staffs of the Coastal Commission, State Lands Commission and the California Air Resources Board. The permit shall not be issued until the Commission has approved a Revised Energy Minimization and Greenhouse Gas Reduction Plan after a public hearing." Since the Special Condition was adopted, Poseidon has reviewed comments from the November 15 hearing as well as CCC staff's draft findings, and continued to work with the CCC, CSLC and CARB to refine the CAP and ensure a complete understanding of the process it sets forth to meet Poseidon's commitments. Poseidon's November 20, 2007 draft of the CAP reflected changes made in response to helpful comments from these agencies and is attached to this document as Appendix A. Poseidon's written responses to numerous questions and comments from the CCC and CSLC about the CAP are attached as Appendix B. More recently, CCC staff issued to Poseidon additional comments and a draft "Greenhouse Gas Emissions Template" (the Draft CCC Template), and instructed Poseidon to revise its CAP in accordance with the template. CCC staff also requested that Poseidon rename the CAP with a new title, the Project's Energy Minimization and Greenhouse Reduction Plan (the Plan). The Draft CCC Template and the most recent comments and Poseidon responses are attached as Appendix C.

On May 2, 2008, Poseidon met with representatives of the CCC, CSLC and various agencies in the San Diego region to further discuss details of the Plan and its implementation. The purpose of this document is to present Poseidon's revised Plan in response to the additional comments received, the May 2 meeting, and the draft CCC Template.

1. Project Overview.

The 50 million gallon per day (MGD) Project (Figure 1) is co-located with the Encina generation station, which currently uses seawater for once-through cooling. The Project is developed as a public-private partnership between Poseidon and nine local utilities and municipalities.

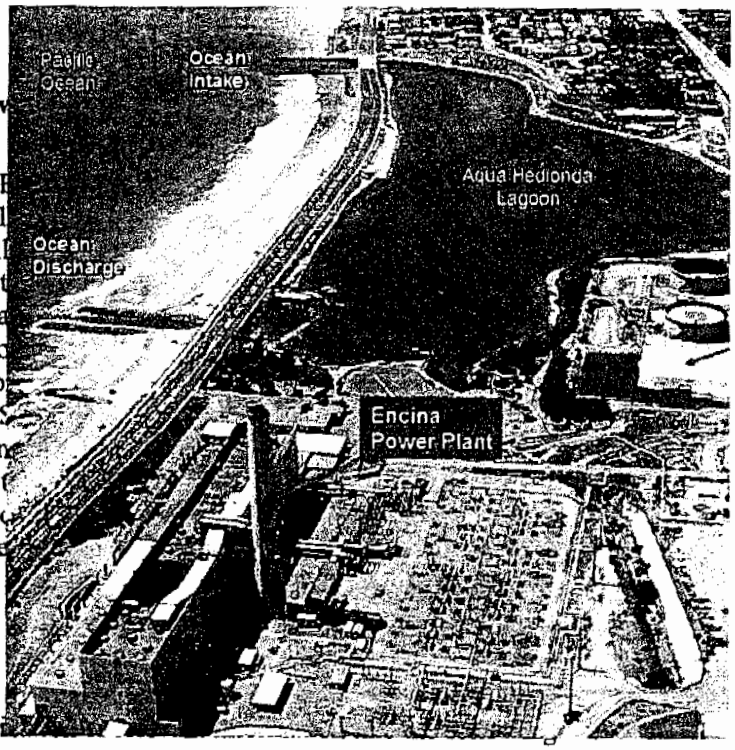

Figure 1 - Carlsbad Seaw

In 2006, California legislation introduced the AB reduce the GHG emissions of the state to 1990 l legislation or its implementing regulations will[1] emits significant GHGs indirectly through elect AB 32 and is committed to helping California causes of Climate Change. As a result, Poseido emissions associated with the Project's operatio incorporated into the Project's permit through S Coastal Commission and agreed to by Poseidon staff direction, Poseidon is required to submit showing how the Project will minimize its elec resulting from net increases in electricity use ove

2. CCC Draft Emissions Template.

The draft CCC Template establishes "a protocol emissions of applicants," and calls for the organi three sections:

1. Identification of the amount of GHGs emitted from the Project,
2. On-Site and Project related measures planned to reduce emissions, and
3. Off-site mitigation options to offset remaining emissions.

[1] AB 32's implementing regulations are currently being drafted and will subsequently be released for public comment. AB 32's regulations, when promulgated, will likely target direct emitters of GHGs, including SDG&E (the source of the Project's electricity), rather than indirect emitters such as the Project. In any case, Poseidon will modify its Plan to conform with these regulations to the extent that they are applicable to the Project.

After a brief explanation of Poseidon's overall strategy for eliminating the Project's net indirect GHG emissions, this document then organizes the Plan into the CCC's three general categories.

3. Overview of the Project's GHG Reduction Strategy.

Since offsetting net indirect GHG emissions is an ongoing process dependent on dynamic information, Poseidon's plan for the assessment, reduction and mitigation of GHG emissions establishes a protocol for identifying, securing, monitoring and updating measures to eliminate the Project's net carbon footprint. Once the Project is operational and all measures to reduce energy use at the site have been taken, the protocol involves the following steps, completed each year:

1. Determine the energy consumed by the Project for the previous year using substation(s) electric meter(s) readings from San Diego Gas & Electric's (SDG&E) or any other entity from which the Project obtains all or part of its electricity at any time in the future.

2. Determine SDG&E emission factor for delivered electricity from its most recently published CCAR Annual Emissions Report. Reports are issued annually and are accessible on the CCAR's website. Emission factors will be obtained from CARB if and when SDG&E's certified emission factor for delivered electricity is publicly available through CARB's anticipated GHG Inventory program. If at any time in the future the Project obtains all or part of its electricity from an entity other than SDG&E, the appropriate CCAR emission factor for that entity shall be used. While current emissions reports only report CO_2, future reports are expected to include the five additional GHGs (methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride). To the extent that these additional GHGs are included in future reports, they will be converted to carbon equivalence for the Project and offset under the Plan.

3. Calculate the Project's gross indirect GHG emissions resulting from Project operations by multiplying its electricity use by the emission factor.

4. Calculate the Project's net indirect GHG emissions by subtracting emissions avoided as a result of the Project (Avoided Emissions) and any existing offset projects and/or Renewable Energy Credits (RECs).

5. If necessary, purchase carbon offsets or RECs to zero-out the Project's net indirect GHG emissions; provided, however, that if through the process set forth in Part III of this Plan, it is determined that (i) such offsets or RECs are not reasonably available; (ii) the "market price" for such offsets is not reasonably discernable; (iii) the market for offsets/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, Poseidon shall pay a fee into an escrow fund, ~~with prior notice to the CCC and third party oversight,~~ for the purpose of funding GHG offset projects as they become available. – (3) C

Energy efficiency measures and on-site use of renewable resources will be given the highest priority. In addition, through its annual program to offset net carbon emissions for that year, Poseidon will commit the first $1 million spent on this program to fund the revegetation of areas in the San Diego region impacted by wildfires that occurred in the fall of 2007, as discussed in detail in Part III below.[2]

The following are elements of the Plan organized in accordance with the draft CCC template.

PART I. IDENTIFICATION OF THE AMOUNT OF GHG EMITTED

The Project will produce fresh drinking water using reverse osmosis membrane separation. The treatment processes used at the Plant do not generate GHGs. The desalination process does not involve heating and vaporization of the source seawater and thus does not create emissions of water vapor, carbon dioxide, methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), or sulfur hexafluoride (SF_6). Reverse osmosis membranes do not reject the carbon dioxide, which is naturally dissolved in the source seawater, and this carbon dioxide is retained in dissolved form in the fresh drinking water created by desalination.

The modest number of fleet vehicles used by plant personnel will create a small amount of GHG emissions, but since these emissions make up less than 5% of the Project's carbon footprint, these emissions are considered *de minimis* and are not required to be reported (CCAR General Reporting Protocol of March 2007 (Chapter 5)). The Project will not store or use fossil fuels on site, and will not self-generate electricity that emits GHGs. As a result, Project operations will not create significant direct sources of GHG emissions. There are no direct fugitive emissions from the plant.

The Project's sole significant source of GHG emissions will be indirect emissions resulting from purchased electricity. All of the electricity supply for the desalination plant operations will be provided by SDG&E. Therefore, the complete accounting of significant GHG emissions for the Project will consist entirely of indirect emissions resulting from electricity purchased from SDG&E.[3]

Currently, about 65% of the electricity supplied by SDG&E is generated from fossil fuels[4]. As a result, until SDG&E switches to 100% "green" power supply sources, the Project operations will be indirectly linked to the generation of GHGs.

The total net indirect GHG emissions of the Project from the stationary combustion of fossil fuels to generate electricity is dependent on three key factors: (1) how much electricity is used by the Project; (2) sources of energy (fossil fuels, wind, sunlight, etc.) used to generate the electricity supplied to the plant, and (3) the Avoided Emissions, i.e., the amount of energy saved

[2] The California Coastal Commission conditioned the Project's Coastal Development Permit on Poseidon committing the first $1 million spent on this program to the revegetation of areas impacted by wildfires in the San Diego region.

[3] Typically, GHG emissions from construction of a project are not included in the on-going reporting of GHGs from operations. In fact, GHGs from construction are not typically accounted for in a GHG inventory at all.

[4] SDG&E Power Content Label, September 2007

or emissions avoided as a direct result of the Project's operations. These factors will vary over time.

A. Electricity Use by the Project.

The Project will operate continuously, 24 hours a day for 365 days per year, to produce an average annual drinking water flow of 50 million gallons per day (MGD). The total baseline power use for this plant is projected to be 31.3 average megawatts (aMW), or 4.9 MWh per acre-foot (AF) of drinking water. The power use incorporates both production of fresh drinking water, as well as conveyance and delivery of the water to the distribution systems of the public water agencies that have contracted to purchase water from the Project. The total annual electricity consumption for the Project Baseline Design is 274,400 MWh/yr.

B. SDG&E's Emission Factor.

The Project will purchase all of its electricity from SDG&E.[5] Accordingly, the appropriate emission factor to use for the Project's indirect GHG emissions from its electricity use is SDG&E's independently verified and published emission factor for the electricity purchased and consumed during the previous year. The certified emission factor for delivered electricity in 2006 is set forth in the utility's Annual Emissions Report published by CCAR in April 2008. In the published Emissions Report, the current certified emission factor for SDG&E's 2006 delivered electricity is 780.79 lbs of CO_2 per delivered MWH of electricity.

Circumstances will change over the life of the Project. SDG&E's emission factors are updated annually and the amount of energy consumed by the Project may change.[6] As a result, it will be necessary to recalculate the net indirect GHG emissions of the Project on an annual basis using the actual SDG&E emission factor reported to the CCAR (or CARB). Until the mandatory reporting of emission factors under AB 32 is available, the emission factors for SDG&E registered with CCAR are the best available for purposes of planning and permitting this Project.

Statewide initiatives to expand the use of renewable sources of electricity are expected to decrease the emission factors of all California power suppliers in the future. For example, approximately 6% of SDG&E's retail electricity is currently generated from renewable resources (solar, wind, geothermal, and biomass).[7] In their most-recent Long-term Energy Resource Plan, SDG&E has committed to increase energy from renewable sources by 1% each year, reaching 20% by year 2017. These and other reductions are expected to further reduce the Project's net indirect GHG emissions over time.

Table 1 summarizes the Project's estimated gross indirect CO_2 emissions from purchased electricity for Project operations, based on the most current information.

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[5] If at any time in the future the Project obtains all or part of its electricity from an entity other than SDG&E, the appropriate CCAR emission factor for that entity shall be used.

[6] SDG&E Annual Emissions Reports to CCAR have changed each year. For years 2004, 2005 and 2006 the emissions factors have been 614, 546 and 781 lbs of CO_2/MWh, respectively.

[7] SDG&E Power Content Label, September 2007.

Table 1 - Identification of Gross Indirect CO_2 Emissions from Purchased Electricity for Project Operations

Source	Total Annual Power Use (MWh/ year)	Total Annual Emissions (metric tons CO_2/ year)
Project Baseline Design	274,400	97,165

PART II: ON-SITE AND PROJECT-RELATED REDUCTION OF GHG EMISSIONS] (3) A

To determine the Project's indirect GHG emissions, on-site and project-related reductions in emissions must also be considered. These are carbon emission reductions that result from measures that reduce energy requirements (increased energy efficiency, potential onsite solar, recovery of CO_2 and green building design), as well as Project-related emissions that will be avoided (Avoided Emissions) as a direct result of the Project and its various components (coastal wetlands restoration, reduced energy use from water reclamation, and replacing Customers' SWP water with water from the Project).

A. Increased Energy Efficiency.] (3) A

Poseidon has committed to implement certain measures to reduce the Project's energy requirements and GHG emissions, and will continuously explore new technologies and processes to further reduce and offset the carbon footprint of the Project, such as the use of carbon dioxide from the ambient air for water treatment. These measures are set forth below.

The Project's high-energy efficiency design incorporates state-of-the-art features minimizing plant energy consumption. One such feature is the use of a state-of-the art pressure exchanger-based energy recovery system that allows recovery and reuse of 33.9% of the energy associated with the reverse osmosis (RO) process. A significant portion of the energy applied in the RO process is retained in the concentrated stream. This energy bearing stream (shown with red arrows on Figure 2) is applied to the back side of pistons of cylindrical isobaric chambers, also known as "pressure exchangers" (shown as yellow cylinders on Figure 2). These energy exchangers recover and reuse approximately 45% of the energy used by the RO process.[8]

[8] The "45 % percent energy recovery and reuse" refers to the gross energy recovery potential, while the "33.9 % energy recovery and reuse" refers to the actual energy savings associated with the energy recovery system. The difference between gross and actual energy savings is due to mechanical inefficiencies of the recovery system and associated friction losses. Thus, for purposes of calculating the overall energy savings, Table 2 correctly reflects 33.9% savings associated with the pressure exchanger.

Figure 2 - Energy Recovery System for the Carlsbad Seawater Desalination Plant

Currently there are no full-scale seawater desalination plants in the US using the proposed state-of-the art pressure exchanger energy recovery technology included in the "High Efficiency Design" (Table 2). All existing seawater desalination projects in the US, including the 25 MGD Tampa Bay seawater desalination plant, which began commercial operation on January 25, 2008, are using standard energy recovery equipment – i.e., Pelton wheels (see Figure 2). Therefore, the Pelton wheel energy recovery system is included in the "Baseline Design" in Table 2.

The pressure exchanger technology that Poseidon proposes to use for the Project is a national technology. The manufacturer of the pressure exchangers referenced in Table 2 of the Project Power Budget is Energy Recovery, Inc., a US company located in San Leandro, California (www.energyrecovery.com).

A pilot-scale seawater desalination plant using the pressure exchanger technology proposed by Poseidon and supplied by Energy Recovery, Inc. has been in operation at the US Navy's Seawater Desalination Testing Facility in Port Hueneme, California since 2005. The overall capacity of this desalination plant is 50,000 to 80,000 gallons per day. The pilot testing work at this facility has been conducted by the Affordable Desalination Collaboration (ADC), which is a California non-profit organization composed of a group of leading companies and agencies in the desalination industry (www.affordabledesal.com). A portion of the funding for the operation of this facility is provided by the California Department of Water Resources (DWR) through the state's Proposition 50 Program. The DWR provides independent oversight of this project and reviews project results. In addition, representatives of the California Energy Commission and the California Department of Public Health are on the Board of Directors of the ADC.

The proposed pressure exchanger technology (i.e., the same pressure exchanger employed at the ADC seawater desalination plant) was independently tested at Poseidon's Carlsbad seawater desalination demonstration plant. More than one year of testing has confirmed the validity of the conclusions of the ADC for the site-specific conditions of the Project. The test results from the Carlsbad seawater desalination demonstration plant were used to calculate the energy efficiency of the pressure exchangers included in Table 2. Poseidon's technology evaluation work at the Carlsbad seawater desalination demonstration plant was independently reviewed and recognized by the American Academy of Environmental Engineers and by the International Water Association, who awarded Poseidon their 2006 Grand Prize in the field of Applied Research.

Table 2 - Comparison of Baseline and High-Efficiency Power Budget for 50 MGD Water Production Capacity

CARLSBAD DESALINATION PROJECT
COMPARISON OF BASELINE AND HIGH-EFFICENCY POWER BUDGET
FOR 50 MGD WATER PRODUCTION CAPACITY

Unit	Baseline Design - Power Use			High Efficency Design - Power Use			Additional Costs for High Efficiency Equipment (US$2008)
Key Treatment Process Pumps	(Hp)	Equipment Efficiency	Equipment Type	(Hp)	Equipment Efficiency	Equipment Type	
Power Plant Intake Pumps (Stand-Alone Operation)	3,750	70%	Standard Motors - No VFDs	3,750	70%	Standard Motors - No VFDs	None
Seawater Intake Pumps	2,100	70%	Standard Motors - No VFDs	1,838	80%	High Eff Motors - VFDs	US$0.7 MM
Reverse Osmosis Pumps	30,100	82%	High Eff Motors - No VFDs	30,100	82%	High Eff Motors - No VFDs	None
Energy Recovery System - Power Reduction	(7,550)	-25.1%	Pelton Wheels	(10,200)	-33.9%	Pressure Exchangers	US$5.0 MM
Product Water Transfer Pumps	10,680	70%	Standard Motors - No VFDs	9,350	80%	High Eff Motors & VFDs	US$3.4 MM
Pretreatment Filter Service Equipment							
Microscreen Pumps	150	65%	Standard Motors - No VFDs	150	65%	Standard Motors - No VFDs	None
Ultrafiltration Vacuum Pumps	780	70%	Standard Motors - No VFDs	680	80%	High Eff Motors - with VFDs	US$0.3 MM
Filter Backwash Blowers	400	70%	Standard Motors - No VFDs	400	70%	Standard Motors - No VFDs	None
Backwash Pumps	160	70%	Standard Motors - No VFDs	160	70%	Standard Motors - No VFDs	None
Backwash Equalization Basin Blowers	80	70%	Standard Motors - No VFDs	80	70%	Standard Motors - No VFDs	None
UF and RO Membrane Cleaning Systems							
Membrane Cleaning Pumps	30	70%	Standard Motors - No VFDs	30	70%	Standard Motors - No VFDs	None
Scavenger Tank Mixing System	50	70%	Standard Motors - No VFDs	50	70%	Standard Motors - No VFDs	None
Flush Pumps	150	70%	Standard Motors - No VFDs	150	70%	Standard Motors - No VFDs	None
Cleaning Chemicals System	15	70%	Standard Motors - No VFDs	15	70%	Standard Motors - No VFDs	None
Sewer System Transfer Pumps	15	65%	Standard Motors - No VFDs	15	65%	Standard Motors - No VFDs	None
Chemical Feed Equipment							
Polymer Feed System	15	65%	Standard Motors - No VFDs	15	65%	Standard Motors - No VFDs	None
Ammonia Feed System	30	65%	Standard Motors - No VFDs	30	65%	Standard Motors - No VFDs	None
Lime Feed System	200	65%	Standard Motors - No VFDs	200	65%	Standard Motors - No VFDs	None
Carbon Dioxide Feed System	30	65%	Standard Motors - No VFDs	30	65%	Standard Motors - No VFDs	None
Sodium Hypochlorite Feed System	40	65%	Standard Motors - No VFDs	40	65%	Standard Motors - No VFDs	None
Other Chemical Feed Systems	10	65%	Standard Motors - No VFDs	10	65%	Standard Motors - No VFDs	None
Service Facilities							
HVAC	250	NA	Standard Equipment	250	NA	Standard Equipment	None
Lighting	120	NA	Standard Equipment	120	NA	Standard Equipment	None
Controls and Automation	40	NA	Standard Equipment	40	NA	Standard Equipment	None
Air Compressors	100	NA	Standard Equipment	100	NA	Standard Equipment	None
Other Miscellaneous Power Uses	250	NA	Standard Equipment	250	NA	Standard Equipment	None
TOTAL DESALINATION PLANT POWER USE	41,996			37,663			
	31.32	MW		28.08	MW		

Figure 3 - Tampa Bay Desalination Plant Pelton Wheel Energy Recovery System

Table 2 presents a detailed breakdown of the projected power use of the Project under a Baseline Design and High-Energy Efficiency Design. As indicated in this table, the Baseline Design includes high efficiency motors for all pumps, except the largest reverse osmosis feed pumps, and a Pelton wheel energy recovery system which is the most widely used "standard' energy recovery system today. The total desalination power use under the Baseline Design is 31.3 aMW, which corresponds to a unit power use of 15.02 kWh/kgal[9] (4,898 kWh/AF)[10].

In addition to the state of the art-pressure exchanger system described above, the High-Energy Efficiency Design incorporates premium efficiency motors and variable frequency drives (VFDs) on desalination plant pumps that have motors of 500 horsepower or more. The total desalination plant energy use under the High-Energy Efficiency Design is a28.1 MW, which corresponds to unit power use of 13.488 kWh/kgal[11] (4,397kWh/AF)[12].

The main energy savings result from the use of pressure exchangers instead of Pelton wheels for energy recovery. The pressure exchangers are projected to yield 2,650 hp (2.0 aMW)[13] of power savings, which is 6.3 % reduction of the total power use of 31.3 aMW. Converted into unit power savings, the energy reduction of 2.0 aMW corresponds to 0.95 kWh/kgal[14] (310 kWh/AF)[15]. The installation of premium-efficiency motors and VFDs on large pumps would result in additional 1.2 aMW (4%) of power savings.

The power savings of 0.95 kWh/kgal associated with the use of pressure exchangers instead of Pelton wheels for energy recovery are substantiated by information from several full-scale desalination plants which have recently replaced their existing Pelton wheel energy recovery systems with pressure exchangers in order to take advantage of the energy savings offered by this technology (see Appendix D). Appendix D contains energy data for a seawater desalination plant in Mazarron, Spain where a Pelton wheel system was replaced with PX pressure exchangers. As indicated on Table 2 of Attachment 1, the replacement resulted in energy reduction from 3.05 kWh/m^3 to 2.37 kWh/m^3 (i.e., 0.68 kWh/m^3 or 2.57 kWh/kgal). The total actual energy reduction ~~that would result~~resulting from the use of state-of-the-art desalination and energy recovery technologies and design will be verified by direct readings of the total ~~electric energy~~electricity consumed by the desalination plant at the Project's substation(s) electric meter(s) and documented as soon as the Project is fully operational. - (1)

[9] 31.3 MWh x 1,000 kW/MW/Average Fresh Water Production Rate of 2083 kg/h.
[10] 15.02 kWh/kgal x 326 kgal/AF.
[11] 28.1 MWh x 1,000 kW/MW/2083 kgal/h.
[12] 13.488 KWh/kgal x 326 kgal/AF.
[13] 2650 HP x 0.746 kw/HP
[14] 2.0 x 1000 kw/MW/2083kgal/HR
[15] 0.95 kwh/kgal x 326 kgal/AF

B. GHG Emission Reduction by Green Building Design.

The Project will be located on a site currently occupied by an oil storage tank no longer used by the power plant. This tank and its content will be removed and the site will be reused to construct the Project. Because the facility is an industrial facility, LEED-level certification will not be feasible; but to the extent reasonably practicable, building design will follow the principles of the Leadership in Energy and Environmental Design (LEED) program. LEED is a program of the United States Green Building Council, developed to promote construction of sustainable buildings that reduce the overall impact of building construction and functions on the environment by: (1) sustainable site selection and development, including re-use of existing industrial infrastructure locations; (2) energy efficiency; (3) materials selection; (4) indoor environmental quality, and (5) water savings.

The potential energy savings associated with the implementation of the green building design as compared to that for a standard building design are in a range of 300 MWh/yr to 500 MWh/yr. The potential carbon footprint reduction associated with this design is between 106 and 177 tons of CO_2 per year. The energy savings associated with incorporating green building design features into the desalination plant structures (i.e., natural lighting, high performance fluorescent lamps, high-efficiency HVAC and compressors, etc.) are based on the assumption that such features will reduce the total energy consumption of the plant service facilities by 6 to 10 %. As indicated in Table 2, the plant service facilities (HVAC, lighting, controls and automation, air compressors and other miscellaneous power uses) are projected to have power use of 760 hp (250 hp + 120 hp + 40 hp + 100 hp + 250 hp = 760 hp) when standard equipment is used. The total annual energy demand for these facilities is calculated as follows; 760 hp x 0.746 kW/hp x 0.001 kW/MW x 24 hrs x 365 days = 4,967 MWh/yr. If use of green building design features result in 6 % of energy savings, the total annual power use reduction of the service facilities is calculated at 0.06 x 4,967 MWh/yr = 298.02 MWh/yr (rounded to 300 MWh/yr). Similarly, energy savings of 10 % due to green building type equipment would yield 0.1 x 4,967 MWh/yr = 496.7 MWh/yr (rounded to 500 MWh/yr) of savings. The ~~actual savings will be determined during the final building design process.~~ **total actual energy reduction resulting from the use of the green building design will be verified by direct readings of the total electricity consumed by the desalination plant at the Project's substation(s) electric meter(s) and documented as soon as the Project is fully operational.**

C. On-Site Solar Power Generation.

Poseidon is exploring the installation of rooftop photovoltaic (PV) system for solar power generation as one element of its green building design. Brummitt Energy Associates of San Diego completed a feasibility study in March 2007 of a photovoltaic system at the Carlsbad Desalination Plant. (The solar feasibility study is attached as Appendix H) If the solar installation described by Brummitt is implemented, the main desalination plant building would accommodate solar panels on a roof surface of approximately 50,000 square feet, with the potential to generate approximately 777 MWh/yr of electricity. If installed, the electricity produced by the onsite PV system would be used by the Project and therefore would reduce the Project's electrical demand on SDG&E. The corresponding reduction of the Project's indirect emissions would be 275 tons of CO_2 per year. Poseidon is exploring other solar proposals and

will update this information as it becomes available. Ultimately, the electricity and corresponding GHG savings of any on-site solar installation will be documented in the Project's annual electricity usage information. Poseidon will use commercially reasonable efforts to implement an on-site solar power project if it is reasonably expected to provide a return on the capital investment over the life of the Project.

If Poseidon proceeds with an onsite PV system, the total actual energy reductions **resulting from the use of on-site solar power generation** will be verified by direct readings of the total ~~electric energy produced~~**electricity consumed** by the ~~solar~~**desalination** ~~plant~~**plt** at the ~~system~~**Project**'s **substation(s)** electric meter**(s)** and documented once the system is fully operational.

] - ①

D. Recovery of CO_2

] ③A

Approximately 2,100 tons of CO_2 per year are planned to be used at the Project for post-treatment of the product water (permeate) produced by the reverse osmosis (RO) system. Carbon dioxide in a gaseous form will be added to the RO permeate in combination with calcium hydroxide or calcium carbonate in order to form soluble calcium bicarbonate which adds hardness and alkalinity to the drinking water for distribution system corrosion protection. In this post-treatment process of RO permeate stabilization, gaseous carbon dioxide is sequestered in soluble form as calcium bicarbonate. Because the pH of the drinking water distributed for potable use is in a range (8.3 to 8.5) at which CO_2 is in a soluble bicarbonate form, the carbon dioxide introduced in the RO permeate would remain permanently sequestered. During the treatment process the calcium carbonate (calcite – CaCO3) reacts with the carbon dioxide injected in the water and forms completely soluble calcium bicarbonate as follows:

$$CaCO_{3\,(solid)} + CO_{2\,(gas)} + H_2O_{\,(liquid)} \rightarrow Ca(HCO_3)_{2\,(liquid\ solution)}$$

At the typical pH range of drinking water (pH of 8.3 to 8.5) the carbon dioxide will remain in the drinking water in soluble form (see Figure 4) and the entire amount (100 %) of the injected carbon dioxide will be completely dissolved.

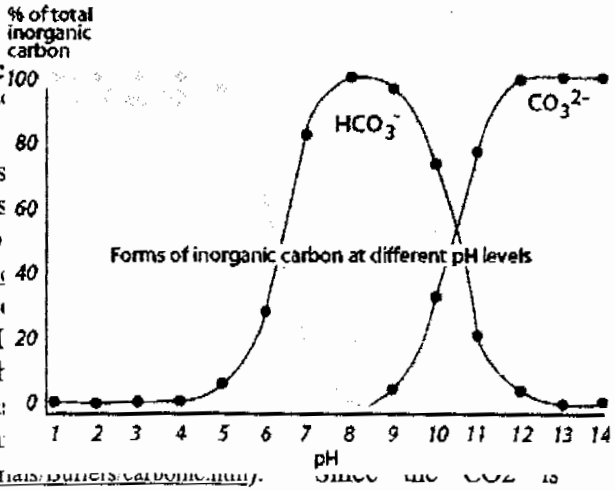

Figure 4 – Relationship between free c
(Source: http://www.cotf.edu/ete/m

[16] This chemical reaction and information pres
chemistry of water. *See* American Water Works
Supply Practices, M46, Reverse Osmo
http://www.chem1.com/CQ/hardwater.html; http://www.
the desalinated drinking water is delivered to in
water will be ingested directly or with food. M
purposes – personal hygiene, irrigation, etc. Th
be dissociated into calcium and bicarbonate ion
human body th
(http://www.chemistry.wustl.edu/~courses/genchem/Tutorials/Buffers/carbonic.htm). Since the CO_2 is sequestered into the bicarbonate ion, human consumption of the desalinated water will not result

A small quantity of carbon dioxide used in the desalination plant post-treatment process is sequestered directly from the air when the pH of the source seawater is adjusted by addition of sulfuric acid in order to prevent RO membrane scaling. A larger amount of CO_2 would be delivered to the Project site by commercial supplier for addition to the permeate. Depending on the supplier, carbon dioxide is of one of two origins: (1) a CO_2 Generating Plant or (2) a CO_2 Recovery Plant. CO_2 generating plants use various fossil fuels (natural gas, kerosene, diesel oil, etc.) to produce this gas by fuel combustion. CO_2 recovery plants produce carbon dioxide by recovering it from the waste streams of other industrial production facilities which emit CO_2-rich gasses: breweries, commercial alcohol (i.e., ethanol) plants, hydrogen and ammonia plants, etc. Typically, if these gases are not collected via CO_2 recovery plant and used in other facilities, such as the desalination plant, they are emitted to the atmosphere and therefore, constitute a GHG release.

To the extent that it is reasonably available, Poseidon intends to acquire the carbon dioxide from a recovery operation. Use of recovered CO_2 at the Project would sequester 2,100 tons of CO_2 per year in the Project product water. The total annual use of carbon dioxide (i.e., 2,100 tons/CO_2 per year) in the water treatment process was determined based on the daily carbon dioxide consumption presented in Table 4.6-2 of Section 4.6 "Hazards and Hazardous Materials" of the certified Carlsbad desalination project Environmental Impact Report (EIR). The daily consumption of CO_2 in this table is 12,540 lbs of CO_2/day. The annual consumption is calculated as 12,540 lbs/day x 365 days /2,200 lbs/ton = 2,080.5 lbs of CO_2/yr (which was rounded to 2,100 lbs/yr). The daily amount of carbon dioxide in Table 4.6-2 of the EIR was calculated based on the dosage needed to provide adequate hardness (concentration of calcium bicarbonate) in the seawater to protect the water distribution system from corrosion. This amount was determined based on pilot testing of distribution system piping and household plumbing at the Carlsbad seawater desalination demonstration project. The testing was completed using the same type of calcium carbonate chips as those planned to be used in the full-scale operations. Every load of carbon dioxide delivered to the desalination plant site will be accompanied by a certificate that states the quantity, quality and origin of the carbon dioxide and indicates that this carbon dioxide was recovered as a site product from an industrial application of known type of production (i.e., brewery, ethanol plant, etc.), and that it was purified to meet

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in release of CO2. The bicarbonate in the urine will be conveyed along with the other sanitary sewerage to the wastewater treatment plant. Since the bicarbonate is dissolved, it will not be significantly impacted by the wastewater treatment process and ultimately will be discharged to the ocean with the wastewater treatment plant effluent. The ocean water pH is in a range of 7.8 to 8.3, which would be adequate to maintain the originally sequestered CO_2 in a soluble form – see Figure 4 above. Other household uses of drinking water, such as personal hygiene, do not involve change in drinking water pH as demonstrated by the fact that pH of domestic wastewater does not differ significantly from that of the drinking water. A portion of the household drinking water would likely be used for irrigation. A significant amount of the calcium bicarbonate in the irrigation water would be absorbed and sequestered in the plant roots (http://www.pubmedcentral.nih.gov/pagerender.fcgi?artid=540973&pageindex=1). The remaining portion of calcium bicarbonate would be adsorbed in the soils and/or would enter the underlying groundwater aquifer.

the requirements associated with its use in drinking water applications (i.e., the chemical is NSF approved). The plant operations manager will receive and archive the certificates for verification purposes. At the end of the year, the operations manager will provide copies of all certificates of delivered carbon dioxide to the independent third party reviewer responsible for verification facility compliance with the Energy Minimization and Greenhouse Gas Reduction Plan.

As noted, verification would be provided through certificates of origin received from suppliers of CO_2 delivered to the Project site indicating the actual amount of CO_2 delivered to the site, date of delivery, origin of the CO_2, and the purity of this gas. Poseidon will place conditions in its purchase agreements with CO_2 vendors that require transfer of CO_2 credits to Poseidon and otherwise ensure that the CO_2 is not accounted for through any other carbon reduction program so as to avoid "double counting" of associated carbon credits.

E. Avoided Emissions from Reducing Energy Needs for Water Reclamation.] (3)A

The Project will result in Avoided Emissions because it will cause a change in operations by the Carlsbad Municipal Water District (CMWD), which owns and operates a water reclamation facility that includes micro-filtration (MF) and RO treatment for 25% of its water supply. The purpose of the MF/RO system is to reduce the salinity of the recycled water to below 1,000 mg/L so it will be suitable for irrigation. The elevated salinity of the recycled water is due in part to the salinity of the City's drinking water supply.

The Project will effectively eliminate this problem by lowering the salinity in the source water of the communities upstream of the water recycling facility, thereby eliminating the need for operation of the MF/RO portion of the water recycling process. Implementation of the Project will significantly reduce or possibly eliminate the need to operate the MF/RO system, leading to Avoided Emissions from the lower electricity use by CMWD. This will reduce the carbon footprint of the Carlsbad Water Reclamation Facility as follows: 1,950 MWh/yr x 780.79 lbs of CO_2 /MWh = 1,522,541 lbs of CO_2/yr (690 tons of CO_2/yr).

The total actual energy reduction that would result from the higher quality water use upstream of the water recycling facility will be verified annually by CMWD, using actual billing and performance data. This will be accomplished through a comparison of the pre-Project energy use attributable to the RO/MF portion of the water recycling process to the post-Project energy use.

F. Avoided Emissions from Displaced Imported Water.] (3)A

Another source of Avoided Emissions will result from the Project's introduction of a new, local source of water into the San Diego area; water that will displace imported water now delivered to Customers from the State Water Project (SWP) – a system with its own significant energy load and related carbon emissions.

One of the primary reasons for the development of the Project is to replace imported water with a locally produced alternative drought-proof source of water supply. Currently, San Diego County imports approximately 90% of its water from two sources – the SWP and the Colorado River.

These imported water delivery systems consist of a complex system of intakes, dams, reservoirs, aqueducts and pump stations, and water treatment facilities.

The proposed Project will supply 56,000 acre-feet of water per year to the San Diego region. The Project will provide direct, one-to-one replacement of imported water to meet the requirements of the participating water agencies, thus eliminating the need to pump 56,000 acre feet of water into the region.[17]

The 2003 multi-state Colorado River quantitative settlement agreement forced Metropolitan Water District of Southern California (MWD) to reduce its pumping from the Colorado River by 53% -- from 1.20 MAFY to 0.56 MAFY. As a result, MWD now operates its imported water delivery system to base load its Colorado River allotment and draw from the SWP only as needed to serve demand that cannot be met by the lower cost water available from the Colorado River Aqueduct. Consequently, the proposed Project will reduce the Customers demand on the SWP.

The total amount of electricity needed to provide treated water to Poseidon's public agency partners via the SWP facilities is shown in Table 1. The net power requirement to pump an acre-foot of water through the East Branch of the SWP is 3,248 KWh (source: DWR). Approximately 2% of the SWP water pumped to Southern California is lost to evaporation from Department of Water Resources' reservoirs located south of the Tehachapi Mountains (source: DWR). The evaporation loss results in a net increase of 68.3 KWh per acre-foot of SWP water actually delivered to Southern California homes and businesses. Finally, prior to use, the SWP water must be treated to meet Safe Drinking Water Act requirements. The San Diego County Water Authority (SDCWA) entered into a service contract with CH2M Hill Constructors, Inc., to operate its Twin Oaks Water Treatment Plant with a guaranteed electricity consumption of 100 KWh/AF of water treated (source: SDCWA). The electricity required to deliver an acre foot of treated water to the SDCWA is shown in Table 3.

Table 3 - State Water Project Supply Energy Use

Energy Demand	**KWh/AF**	**Source**
Pumping Through East Branch	3248	DWR
Evaporation Loss	68	DWR
Twin Oaks Water Treatment Plant	100	SDCWA
Total	**3416**	

The reduction of demand for imported water is critical to Southern California's water supply reliability, so much so that MWD not only supports the Project, but has also committed $14 million annually to reduce the cost to Poseidon's customers. Under MWD's program, $250 will

[17] *See* Poseidon Resources Corporation Letter to Paul Thayer Re: Desalination Project's Impact on Imported Water Use, November 8, 2007, including attachments from nine water agencies (Attached as Appendix E).

be paid to water agencies for every acre-foot of desalinated water purchased from the Carlsbad facility, *so long as the desalinated water offsets an equivalent amount of imported water.* MWD has established "Seawater Desalination Policy Principles and Administrative Guidelines" that require recordkeeping, annual data submittals, and MWD audit rights to ensure that MWD water is offset.[18]

The benefits of a reduction in demand on MWD's system are reflected in, among other things, the energy savings resulting from the pumping of water that – but for the Project – would have to continue. For every acre-foot of SWP water that is replaced by water from the proposed Project, 3.4 MWh of electricity use to deliver water to Customers is avoided, along with associated carbon emissions. And since the Project requires 4.4 MWh of electricity to produce one acre-foot of water, the net electricity required to deliver water from the Project to Customers is 1.0 MWh/AF.

Because the Project will avoid the use of 56,000 AFY of imported water to Customers, once in operation, the Project will also avoid 190,641 MWh/yr of electricity consumption otherwise required to deliver that water to Customers, as well as the GHG emissions associated with pumping, treatment and distribution of this imported water. At 780.79 lbs CO_2 per MWh,[19] the total Avoided Emissions as a result of the Project is 67,506 metric tons CO_2/yr.

G. Avoided Emissions through Coastal Wetlands.

13A

The Project also includes the restoration and enhancement of marine wetlands. The restoration project will be in the proximity of the Project. These wetlands will be set-aside and preserved for the life of the Project. Once the wetlands are restored they will act as a carbon "sink" or carbon sequestration project trapping CO_2.

Tidal wetlands are very productive habitats that remove significant amounts of carbon from the atmosphere, a large portion of which is stored in the wetland soils. While freshwater wetlands also sequester CO_2, they are often a measurable source of methane emissions. Coastal wetlands and salt marshes, however, release negligible amounts of greenhouse gases and therefore, their carbon sequestration capacity is not measurably reduced by methane production.

Based on a detailed study completed in a coastal lagoon in Southern California, the average annual rate of carbon sequestration in coastal wetland soils is estimated at 0.033 kg of C/m^2.yr (a 5,000 year average, Brevick E.C. and Homburg J.A., 2004).[20] In tidal ecosystems, sediment accumulation rates (via suspended sediment supply, tidal water flooding, etc.) exhort a major control on carbon sequestration rates. Soil carbon sequestration rates determined recently in the Tijuana Estuary on the Mexico/USA border were determined to be 0.343 kg of C/m^2.yr (Cahoon

[18] MWD's program is documented in a June 22, 2007 letter from its General Manager to Peter Douglas, Executive Director of the California Coastal Commission, as well as various contracts with relevant water agencies.

[19] Since the SWP does not have a published Annual Emissions Report with the CCAR, Poseidon used the certified emission factor for SDG&E system. Poseidon believes this a conservative estimate and will update its calculations when more accurate data is available.

[20] www.slc.ca.gov/Reports/Carlsbad_Desalinization_Plant_Response/Attachment_4.pdf

et. al 1996).[21] (4 = Cahoon, D.R., J.C. Lynch, and A. Powell, Marsh vertical accretion rates in a Southern California estuary, U.S.A., Estuar. Coast. Shelf Sci., 43, 19-32, 1996).

Given that the total area of the proposed wetland project is 37 acres, the carbon sequestration potential of the wetlands is between 4.9 and 51 tons of $C/m^2.yr$. These numbers are calculated as follows: Sequestration Rate (.033 kg of $C/m^2.yr$ and 0.343 kg of $C/m^2.yr$) x Area (37 acres = 149,732.5 m^2) x Weight conversion (1000 kg C = 1 metric ton of C) = tons of C sequestered/$m^2.yr$ (as given above). To get from this unit the standard greenhouse gas unit of tons of CO_2 (not C) of sequestered per year, the conversion factor is 3.664. Therefore, the emissions avoided from the wetlands are estimated to be between 18 and 188 tons of CO_2 per year.

In order to verify the actual soil carbon sequestration rate of the proposed wetland ecosystem, site-specific measurements will need to be made. Protocols for wetlands are being currently being developed for inclusion within the Clean Development Mechanism of the Kyoto Protocol, and we will use these protocols until CCAR makes its own wetland protocol available. We anticipate full inclusion wetland protocols to become available within the lifetime of this project. But for the Project, the wetlands mitigation would not occur, and therefore it satisfies the Regulatory Surplus additionality test. (See, Carbon Offset Projects – Definition (Page 16 herein) for a more detailed discussion of the Regulatory Surplus additionality test.)

Table 4 summarizes the on-site and project-related reductions of GHG Emissions.

Table 4 - On-site and Project-Related Reduction of GHG Emissions

Source	Total Annual Reductions in Power Use (MWh/ year saved)	Total Annual Emissions Avoided (metric tons CO_2/ year avoided)
Reduction due to High-Efficiency Design	(28,244)	(10,001)
Green Building Design	(300 to 500)	(106 to 177)
On-site Solar Power Generation	(0-777)	(0-275)
Recovery of CO_2	(NA)	(2,100)
Reducing Energy Needs for Water Recycling	(1,950)	(690)
Reduced Water Importation	(190,641)	(67,506)
Sequestration in Coastal Wetlands	(NA)	(18 to ~~304~~188)

(1)

[21] www.sfbayjv.org/tools/climate/CarbonWtlandsSummary_07_Trulio.pdf

Subtotal On-site Reduction Measures	(NA)	**(80,421 to ~~81,053~~80,937)**

PART III: IDENTIFICATION OF MITIGATION OPTIONS TO OFFSET ANY REMAINING GHG EMISSIONS

Offsite reductions of GHG emissions that are not inherently part of the Project include actions taken by Poseidon to participate in local, regional, state, national or international offset projects that result in the cost-effective reduction of GHG emissions equal to the indirect Project emissions Poseidon is not able to reduce through other measures. One such offset project – the expenditure of one million dollars to reforest areas burned out by fires in the San Diego region in the fall of 2007 – has been identified by the CCC as the first priority among these measures. As set forth in more detail below, other **carbon offset** projects will be ~~identified through a selection process beginning about fifteen months before operations commence, starting with the issuance of a Request for Proposal (RFP) for carbon offset projects and renewable energy credits (RECs). The RFP will require compliance with comprehensive standards for carbon offset projects such as those set forth in AB 32.~~[22] **purchased by Poseidon through/from CCAR or CARB approved projects or other approved Third Party Providers of offsets set forth in Section III.C below. Projects available from these Third Party Providers will be consistent with AB 32 principles.**[22] ~~Working with an experienced, qualified carbon offset broker together with the California Center for Sustainable Energy (CCSE) and a representative with expertise with greenhouse gas mitigation and energy or air regulatory policy jointly selected with CCC staff, Poseidon will select the most cost effective mix that meets the criteria described herein, and then contract for the acquisition or development of the projects selected.~~ The exact nature and cost of the offset projects and RECs will not be known until ~~they RFP process is complete~~ **are acquired by Poseidon**. Offsets or RECs will also be used as the swing mitigation option to "true-up" changes over time to the Project's net indirect GHG emissions, as discussed below.

A. Annual "True-Up" Process

Since the quantity of offsets required will vary from year-to-year, the goal of the annual "True-Up" process is to enable Poseidon to meet the subject year's need for metric tons of offsets by purchasing or banking offsets in the short-term, while allowing Poseidon to make long-term purchases and bank offsets to decrease market exposure and administrative costs. To complete the True-Up process, ~~CCSE~~**the California Center for Sustainable Energy (CCSE)** will obtain the latest SDG&E emission factor from the annual web-based CARB or CCAR Emissions Report within 60 days of the end of each calendar year, or the date of publication of the CARB

[22] Part 4, Section 38562(d)(1)&(2) states that CARB regulations covering GHG emission reductions from regulated "sources" must ensure that such reductions are "real, permanent, quantifiable, verifiable, . . . enforceable [and additional]". While the Project is not a "source" under AB 32 and the criteria are not currently defined under implementing regulations, ~~Poseidon~~**Third Party Providers** will evaluate potential offset projects against ~~the~~**equivalent** criteria using ~~the best available~~**their own** protocols that employ the same criteria.

or CCAR Emissions Report on the relevant CARB or CCAR web site, whichever is later. Within 120 days of the end of the prior calendar year or publication of the emission factor (whichever is later), CCSE, with assistance from Poseidon as needed, will gather electricity usage data, relevant data regarding Avoided Emissions, and then calculate the necessary metric tons of offsets required for the subject year. The subject year's emissions will be calculated using actual billing data and the emissions factor for the relevant annual period. The subject year's calculated metric tons of ~~offsets~~**net emissions** will be compared to the amount of metric tons of offsets previously acquired by Poseidon to determine if Poseidon ~~is surplus or deficit~~**has a positive or negative balance of net GHG emissions** for the subject year, and all of this information will be included in the Annual GHG Report to be ~~reviewed by the San Diego Air Pollution Control District ("SDAPCD") for consistency with the requirements of this Plan~~**submitted to the Commission each year** as discussed below. If there is a ~~deficit of offsets~~**positive balance of net GHG emissions**, Poseidon will purchase offsets to eliminate the ~~deficit within 6 months of the date the deficit is concurred with by SDAPCD after its review of~~**positive balance, and provide the Commission with documentation substantiating that purchase, within 120 days of the date the positive balance is identified in** the Annual GHG Report. If there is a ~~surplus of offsets~~**negative balance of net GHG emissions**, the surplus ~~tons~~**offsets** may be carried forward into subsequent years or sold by Poseidon on the open market.

Prior to the commencement of Project operations, Poseidon will be required to purchase offsets sufficient to cover estimated net (indirect) GHG emissions for at least the first year of operation (~~as determined by CCSE and~~ subject to ~~SDAPCD~~**Commission staff** concurrence), or to cover a longer period of time at Poseidon's option, based on the most recently published SDG&E emission factor from CARB or CCAR and estimated electricity usage data for the first year of the Project period for which offsets are initially purchased. Poseidon will have the option to purchase offsets for any longer period of time up to and including the entire 30 year life of the Project, subject to Poseidon's above-stated obligation to address any ~~deficit in credits~~**positive balance in net GHG emissions** that may subsequently arise. **Beginning with the Sixth Annual Report, Poseidon can maintain a negative balance of net GHG emissions over a rolling five-year period. Poseidon will purchase enough GHG reductions measures that conform to the Plan such that it will not incur a positive net GHG emissions balance over any rolling five-year period.**

B. Carbon Offset Projects – Definition.[23]

An offset is created when a specific action is taken that reduces, avoids or sequesters greenhouse gas (GHG) emissions in exchange for a payment from an entity mitigating its GHG emissions. Examples of offset projects include, but are not limited to: increasing energy efficiency in buildings or industries, reducing transportation emissions, generating electricity from renewable resources such as solar or wind, modifying industrial processes so that they emit fewer GHGs, installing cogeneration, and reforestation or preserving forests.

[23] The following two sections are based on information provided by the Climate Trust (http://www.climatetrust.org/)

One type of offset project is Renewable Energy Credits (RECs), also known as Green Tags, Renewable Energy Certificates or Tradable Renewable Certificates. Each REC represents proof that 1 MW of electricity was generated from renewable energy (wind, solar, or geothermal). For GHG offsetting purposes, purchasing ~~an~~ a REC is the equivalent of purchasing 1 MW of electricity from a renewable energy source, effectively offsetting the GHGs otherwise associated with the production of that electricity. RECs may be sold separately from the electricity. - (1)

Poseidon is committed to acquiring cost-effective offsets that meet rigorous standards, as detailed in this Plan. By requiring adherence to the principles, practices and performance standards described here, the Plan is designed to assure that selected offset projects will mitigate GHG emissions as effectively as on-site or direct GHG reductions. Adherence will ensure that the offset projects acquired by Poseidon are real, permanent, quantifiable, verifiable, enforceable, and additional. **consistent with the principles of AB 32.** — (3)

Additionality. The concept of "additionality" was introduced in Article 12.5 of the Kyoto Protocol, which states that "emission reductions resulting from each project activity shall be . . . reductions in emissions that are additional to any that would occur in the absence of the certified project activity". ~~Poseidon~~**The Third Party Providers** will assess the additionality of each project proposal on a case-by-case basis. Offset project proposers ~~—i.e., those who respond to an RFP—~~will be required **by the Third Party Providers** to demonstrate the additionality of their project. Specifically, ~~Poseidon, working with a third-party such as CCSE and subject to concurrence by the greenhouse gas mitigation and energy or air regulatory policy expert,~~**the Third Party Providers** will perform an initial screening of all proposed offset projects against the following additionality tests before evaluating any other aspects of the proposed project. - (3)B

Along with applicable AB 32 criteria, if any, the carbon offset acquisition process will utilize three widely used tests to determine a project's additionality: 1) Regulatory Surplus Test, 2) Barriers Tests, and 3) Common Practice Test. These tests are based on the Kyoto Protocol's Clean Development Mechanism methodology, as well as the World Resource Institute's GHG Protocol for Project Accounting; and are the emerging norms and best practices in the burgeoning offset market in the United States and internationally.

Test 1: Regulatory Surplus. The Regulatory Surplus Test ensures that the project that is proposed is not mandated by any existing law, policy, statute, regulation, or other legal obligations. Otherwise, it is assumed that the project is being developed to comply with the law or regulation and thus cannot be considered additional to the business as usual scenario.

Test 2: Implementation Barriers. The implementation barriers tests are at the heart of the additionality determination process. There are three main implementation barriers tests: 1) Financial, 2) Technological, and 3) Institutional. A project must meet at least one of the following barriers tests in order to be considered additional.

Test 2(a): Financial Barriers. The Financial Barriers Test addresses how offset funding impacts the project in question. Financial barriers tests are generally considered to be one of the more rigorous and stringent tests of additionality. There are two main types of financial barriers a project can face: capital constraint and internal rate of return. The Capital Constraint Test addresses whether a project would have been undertaken without offset funding. Internal rate of return indicates whether or not a project would have met established targets for

internal rates of return without offset funding. These are not the only acceptable tests of financial barriers, but are the most commonly used.

Positive economic returns do not necessarily make a project non-additional. There are instances where projects with high rates of return remain unimplemented – the energy efficiency sector is the most well know of these examples. To demonstrate additionality for projects that generate rates of return, it can be useful to describe the barriers faced by the project by including a clear explanation of the project's return rate with a pro forma financial analysis showing both the with and without project case. For example, Company Y typically does not pursue project activities unless they provide a 15% rate of return. An energy efficiency upgrade at the facility will generate a 5% rate of return. The additionality case is that offset funding can be used to increase the return of the efficiency measures to a level that is acceptable to management.

Test 2(b): Technological Barriers. There are several categories of assessment that could fall under this test. If the primary reason for implementing a technology is its GHG reduction benefits, that project is generally considered to be additional. For example, if a more energy efficient, though more expensive to manufacture, model of a hot water heater is available and the additional cost is barring its entry into the market, offset funding can help bridge that gap and bring a technology to market that otherwise would not have been. In this case, the GHG reductions resulting from the deployment of the new technology are clearly above and beyond business as usual.

Test 2(c): Institutional Barriers. Institutional barriers can be organizational, social or cultural. If a GHG reduction project falls outside of the normal purview of a company or organization and there is reluctance to implement a project that is not within that purview or to capitalize a project with uncertain returns, offset funding can often assist in overcoming that barrier.

1. **Test 3: Common Practice.** This test is intended to determine whether or not a project is truly above and beyond "business as usual". If a practice is widely employed in a field, it is not considered additional.

~~C. **Initial Carbon Offset Acquisition Process and Timeline.**~~

~~There are three phases to the initial offset acquisition process. It is expected to take up to 12 months from the time of the release of the initial RFP until Emission Reduction Project Agreements (ERPAs) are completed. The development of the RFP should take an additional 3 months. The RFP will be released prior to the commencement of Project operations, and, as stated above, Poseidon will be required to demonstrate the acquisition of offsets for the first year of the Project before it may begin to operate (as determined by CCSE and subject to SDAPCD concurrence).~~

- ~~**Phase I: Submission of Project Information Document.** Offset project proponents will be required to complete an application giving sufficient information about the proposed project. The official requirements for submission will be set forth in the RFP. Two examples of a short and long Project Information Document are included in Appendix F.~~

- ~~**Phase II: Detailed Project Information Document.** A selected short list of proposals will be invited to submit a more detailed project information document.~~

(3)B

- **Phase III: Contract Finalization.** Selected proposals will be invited to finalize an ERPA. The amount of the funding, tons of GHG offsets, and other terms will be set forth in the final ERPA.**D. Project Requirements.** C. Third-Party Acquisition and Verification.

Poseidon will detail in the RFP, which will be subject to review and approval by the Committee (defined in Section F. below), the requirements project proposers must adhere to in order to qualify for consideration. The project requirements will include, at minimum, the following:

- **Minimum project size** (e.g., the project reduces or avoids at least 25,000 metric tons of CO_2 emissions over the contract term).
- **Minimum term for the sale of their emissions reductions** (i.e., terms of 1-5 years, at least 5 years, up to the life of the project, or beyond for sequestration projects).
- **Geographic boundaries** for acceptable projects. Poseidon will establish a hierarchy of geographic preference, beginning with local and regional projects, then in-state, national, and international projects.
- **Contract terms and conditions** based on a standard Emission Reduction Purchase Agreement (ERPA).
- **Price Target** for each metric ton of carbon offset.
- **Timeline and milestone dates**
- **Demonstrate through Evaluation Criteria** set forth in Part III.E below that the project is real, permanent, quantifiable, verifiable, enforceable, and additional.
- **A $1 million investment in reforestation** of areas in the San Diego region impacted by the wildfires that occurred during the fall of 2007.

-(3)B

Poseidon may elect to acquire offsets from/through the CCAR or CARB approved projects, as well as offset projects certified or offered by any existing member of the Offset Quality Initiative, which includes, CCAR, The Climate Trust, Environmental Resources Trust and The Climate Group/Voluntary Carbon Standard (the "Third Party Providers"). Consistent with Staff's recommendation, acquisition of RECs are not limited to purchase from/through CCAR, CARB, or any other Third Party Provider.

E. Evaluation Criteria.

Poseidon may submit a written request to the Executive Director of the CCC requesting that an additional offset provider be designated as a Third Party Provider.[24] In deciding whether or not to approve Poseidon's request, the Executive Director shall consider whether or not the proposed Third Party Provider is an independent and non-affiliated entity that adheres to substantially similar principles and evaluation criteria for high quality offsets as the Third Party Providers listed above. The Executive Director shall determine whether or not to approve Poseidon's request to designate a Third Party Provider within 60 days. Any dispute between Poseidon and Commission Staff regarding the approval or denial of the requested entity may be brought by Poseidon to the CCC for hearing and resolution at the next available hearing date.

[24] The fee charged to Poseidon by the Commission for any request to approve additional offset providers pursuant to Section III.C. or to otherwise make the Plan workable by facilitating Poseidon's purchase of offsets/RECs to zero out the Project's net indirect GHG emissions, shall not exceed $5,000.00.

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The RFP will clearly set forth the criteria to evaluate and select the final projects for contracting. Each project will be evaluated by the Committee to determine whether or not it meets the initial requirements, including whether the project meets the additionality test and is an otherwise eligible project type. Only those that pass these tests will be considered further. Among other factors, proposed offset project applicants will be required to complete an extensive application to allow the Committee to fully evaluate the project. Poseidon will make the final decision on which Committee approved offset projects to fund. Selection criteria will include at least the following:

1. **Cost Effectiveness.** The measure of cost effectiveness will be defined as U.S. dollars per metric ton. Cost effectiveness will be determined using comparative evaluation criteria, provided that no measure will be deemed cost effective if it exceeds 110% of the going market price (to the extent a market price for carbon offsets is reasonably discernable) for offsets in the United States. This provision shall not apply to Poseidon's commitment to contribute $1 million towards reforestation of areas in the San Diego region impacted by the 2007 wildfires.

2. **Additional.** The Committee will assess whether the proposed project passes any of the three additionality tests described above.

3. **Reliability of Proposing Entity.** The Committee will consider the qualifications of the proposing entity, the proposing entities past experience with similar projects, if any, and the qualifications of any organizations cooperating with the project. Proposing entities should be required to demonstrate their financial and institutional capability to deliver the GHG emission reductions that they propose. This criterion assesses whether the project is real, permanent and enforceable.

4. **Reliability of Project Concept.** In evaluating the reliability of offsets delivery, the Committee will consider the quality of the project concept and design, and the performance of similar projects. This criterion assesses whether the project is real, permanent and quantifiable.

5. **Monitoring and Verification Plan.** The Committee will require high quality Monitoring and Verification (M&V) Plans to be implemented for all projects. Although final M&V Plans are not expected to be developed until later in the process, a detailed M&V concept is encouraged. This criterion assesses whether the project is permanent, quantifiable, verifiable and enforceable.

6. **Mitigating Financial Risk of Initiative Participants.** The Committee will give preference to projects that reduce the risk that their investment may not yield the anticipated amount of tons of GHG offsets. The Committee will evaluate all the risk mitigation options that applicants propose. This criterion assesses whether the project is real and enforceable.

7. **Willingness to Accept ERPA Terms and Conditions.** This criterion assesses whether the project is enforceable.

- (3)B

8. **Location.** This criterion assesses whether the project will be a local, regional, in-state, national, or international project, with preference given to local, regional and in-state projects.

F. Third-Party GHG Accounting, and Validation.

CCSE shall include in its Annual GHG Report, discussed in Section III.D below, an accounting summary and documentation from CCAR, CARB and Third Party Providers, as applicable, which verifies that offsets obtained by Poseidon have been verified by CCAR, CARB or a Third Party Provider.

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Throughout the offset selection and implementation process, Poseidon will work with experienced third-party brokers that specialize in the evaluation and selection of offset projects. Poseidon will also work with CCSE, an independent third-party that will be charged with implementing the offset program and ensuring Poseidon's GHG accounting and RFP process is accurate and conforms to the requirements of this Plan and relevant protocol. An Offset Evaluation and Monitoring Committee (the Committee) shall be formed and will consist of one representative each from CCSE and Poseidon, with a third member from academia to be selected jointly by CCSE and Poseidon, subject to CCC Staff approval. The academician shall have a background in energy or air regulatory policy and greenhouse gas mitigation. The Committee will have primary responsibility for overseeing the carbon offset purchasing and implementation process. Although Poseidon will have representation on the Committee, CCSE will retain responsibility for ensuring that implementation of the offset program conforms to the Plan and other applicable requirements, including that all offsets available for selection by Poseidon meet the requirements of Part III.C above.

D. Annual Report

Subject to further review and approval by its governing board, SDAPCD[24] will oversee on an annual basis the work done by Poseidon, CCSE and the Committee, and will manage a publicly accessible database for the Plan. CCSE will prepare and submit to SDAPCD a draft annual report (the Annual GHG Report) that**CCSE will prepare an Annual GHG Report that will describe and account for Poseidon's annual and cumulative balance of verified net GHG emissions reductions. The Annual GHG Report** will analyze and validate (1) the annual GHG emission calculations for the Project, (2) the ~~credit~~**positive** or ~~deficit~~**negative balance** in Poseidon's **net** GHG ~~offset bank, (3) the validity of offset projects against the criteria set forth in Part III.C above~~**emissions, (3) the acquisition of offsets and/or RECs in accordance with this Plan**, and (4) any other information related to Poseidon's efforts to mitigate GHG emissions resulting from the Project's electricity usage. **Each year, CCSE will obtain the new emission factor from CCAR or CARB and prepare and submit Poseidon's Annual GHG Report within 180 days of the date of publication of CCAR/CARB emissions reports.** The Annual GHG Report shall be submitted ~~by CCSE to SDAPCD within 120 days of the end of the prior calendar year or publication of the SDG&E emission factor in the annual CCAR or CARB Emissions Report, whichever is later, as detailed above. SDAPCD will review the Annual GHG Report for consistency with the requirements of this Plan, and send the final report~~ to the CCC and the CSLC, with ~~copies to Poseidon and CCSE. After reviewing the Annual GHG Report,~~

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[24] ~~Poseidon has initiated discussions with SDAPCD and will provide further details regarding its specific role as they become available.~~

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~~SDAPCD will indicate whether or not Poseidon's activities conform to the Plan~~**a copy to Poseidon**. In the event that ~~SDAPCD, after reviewing~~ the Annual GHG Report~~, concurs~~ **indicates** that Poseidon has a ~~deficit in its GHG offset bank~~**positive balance of net GHG emissions** for a particular year, Poseidon shall purchase offsets ~~sufficient to make up the deficit within six months~~**, and provide the Commission with documentation substantiating that purchase, within 120 days of the submission of an Annual GHG Report to the Commission**. If an approved Annual GHG Report demonstrates that Poseidon possesses a ~~surplus of offset credits~~**negative balance of net GHG emissions**, Poseidon will be free to carry those ~~credits~~**surplus offsets** forward into subsequent years or sell them on the open market. **Beginning with the Sixth Annual Report, Poseidon can maintain a negative balance of net GHG emissions over any rolling five-year period. Poseidon will purchase enough GHG reductions measures that conform to the Plan such that it will not incur a positive net GHG emissions balance over any rolling five-year period.**

~~**G. Subsequent RFP Process.**~~

~~If, after circulating the initial RFP and purchasing offsets sufficient to cover at least the first year of Project operations, Poseidon is at any time required to purchase additional offsets, it will have the option to: (1) purchase offsets on the open market to the extent they are available, that meet the criteria of the Plan and are reviewed and approved by the Committee as consistent with the provisions of Parts III(b) and (c) of the Plan, or (2) issue a subsequent RFP(s) soliciting additional offset projects consistent with the provisions of Parts III(b) and (c) of the Plan. Any subsequent RFP shall be issued from time to time in advance of the time when the actual purchase of additional offsets is expected to be required. The criteria for subsequent RFPs shall be the same as for the initial RFP as outlined in the Plan.~~

Before commencing Project operations, Poseidon shall submit its first Annual GHG Report for Commission staff review and approval, which will evidence sufficient offsets to zero out the Project's estimated net indirect GHG emissions for the first year. All subsequent reports will cover one calendar year.

~~H~~E. Contingency if No GHG Reduction Projects are Reasonably Available

~~If, after completing the initial RFP process, or any time thereafter, it is determined by the Committee~~**At any time during implementation of this Plan, Poseidon may seek a determination from the Executive Director** that (i) offset projects in an amount necessary to mitigate the Project's net indirect GHG emissions are not reasonably available; (ii) the "market price" for carbon offsets or RECs is not reasonably discernable; (iii) the market for offsets/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~~, Poseidon will~~**. Any request submitted by Poseidon shall be considered and a determination made by the Executive Director within 60 days. A denial of any such request may be appealed by Poseidon to the Commission for hearing and resolution at the next available meeting date. If Poseidon's request for such a determination is approved by the Executive Director, Poseidon may**, in lieu of funding offset projects or additional offset projects, deposit money into an escrow account **(to be approved by the Executive Director)** to be used to fund GHG offset programs as they become available, with Poseidon to pay into the fund in an amount equal to $10.00 per metric ton for each ton Poseidon has not previously offset,

adjusted for inflation from 2008.[25] ~~Prior to establishing the escrow account, the Committee will provide notice to the Executive Director of the CCC of the Committee's determination that funds should be deposited into an escrow account in lieu of purchasing offsets/RECs, pursuant the provisions of this section of the Plan, along with a written summary providing the basis for that decision. The escrow account may be established within thirty (30)~~**Within 180** days of the Executive Director's ~~receipt of the notice, unless the Executive Director disputes the Committee's determination, in which case the matter shall be referred to the CCC for hearing and resolution~~**determination pursuant to this Section, Poseidon will be required to submit a plan for Executive Director approval that identifies one or more entities who will utilize monies deposited into the escrow account to implement carbon offset projects**.

- (3) C

~~H~~F. Contingency if New GHG Reduction Regulatory Program is Created.

If, at any time during the life of the Project any of the SDAPCD, South Coast Air Quality Management District (SCAQMD), the California Air Resources Board (CARB), SDG&E or other relevant entity initiates a carbon tax or carbon offset program that would allow Poseidon to purchase carbon offsets or payment of fees to compensate for GHG emissions, Poseidon may, at its option, elect to pay into such a program in order to fulfill all or part of its obligations under the Plan to offset net indirect GHG emissions caused by the Project. By receiving certification from the relevant receiving entity that Poseidon has satisfied its obligations under the applicable regulatory program, Poseidon will be deemed to have satisfied its obligation under the Plan to offset net indirect GHG emissions for the part of the offset obligations under the Plan for which such certification is made. Subject to the approval of the relevant receiving entity, Poseidon may carry over any surplus offsets acquired pursuant to the Plan for credit in the new SDAPCD regulatory program.

- (3) D

~~I~~G. Examples of Offset Projects.

Offset projects typically fall within the seven major strategies for mitigating carbon emissions set forth below. A similar range and type of offset projects should be expected from a ~~solicitation or~~ purchase by Poseidon, although it is difficult to anticipate the outcome of Poseidon's offset ~~RFP process~~**acquisitions** at present.

- (3) B

1. Energy Efficiency (Project sizes range from: 191,000 metric tons to 392,000 metric tons; life of projects range from: 5 years to 15 years)

- Steam Plant Energy Efficiency Upgrade
- Paper Manufacturer Efficiency Upgrade
- Building Energy Efficiency Upgrades

2. Renewable Energy (Project sizes range from: 24,000 metric tons to 135,000 metric tons; life of projects range from: 10 years to 15 years)

- Small Scale Rural Wind Development
- Innovative Wind Financing

[25] $10.00 per metric ton is a conservative figure, as offset credits were trading at $4.90 per metric ton on the Chicago Climate Exchange as of market close on July 2, 2008.

- Other renewable resource projects could come from Solar PV, landfill gas, digester gas, wind, small hydro, and geothermal projects

3. **Fuel Replacement** (Project size is: 59,000 metric tons; life of project is: 15 years)
   - Fuels for Schools Boiler Conversion Program

4. **Cogeneration** (Project size is: 339,000 metric tons; life of project is: 20 years)
   - University Combined Heat & Power

5. **Material Substitution** (Project size is: 250,000 metric tons; life of project is: 5 years)
   - Cool Climate Concrete

6. **Transportation Efficiency** (Project sizes range from: 90,000 metric tons to 172,000 metric tons; life of projects range from: 5 years to 15 years)
   - Truck Stop Electrification
   - Traffic Signals Optimization

7. **Sequestration** (Project sizes range from: 59,000 metric tons to 263,000 metric tons; life of projects range from: 50 years to 100 years)
   - Deschutes Riparian Reforestation
   - Ecuadorian Rainforest Restoration
   - Preservation of a Native Northwest Forest

Further details on these projects are set forth in Appendix G.

~~K~~H. Potential Offset Projects Funded by Poseidon.

Participants at the May 2, 2008 CCC Workshop proposed several potential projects that were suggested to be wholly or partially funded by Poseidon ~~through the RFP process~~. Proposers were not prepared at that time to provide details for these projects other than generally describing the project concept. As a result, it is not yet possible to evaluate them for consistency with the applicable criteria for valid GHG reduction projects. The projects include the following: — (3)B

- Reforestation Projects in the San Diego area ravaged by the 2007 fires
- Urban Forestry projects
- Estuary sequestration project
- Wetlands projects
- Fleet Fuel Efficiency Increase & Replacement project
- Accelerated Fleet Hybrid Deployment
- Large-Scale Solar PV project on a covered reservoir
- Mini-Hydro from installing pressure reducing Pelton wheels
- Solar Water Heating for a new city recreation swimming pool
- Lawn Mower Exchange Program (gas exchanged for electric mowers)
- Truck Fleet Conversion (especially older trucks from Mexico)
- School Bus Conversions
- White Tag projects or Energy Efficiency projects

These and other potential offset projects must still be ~~evaluated through the RFP process~~**acquired through one of the Third Party Providers listed in, or approved pursuant to, Section III.C above**, although one project – the San Diego fire reforestation project identified by the CCC and discussed in more detail below – can be identified at this time and Poseidon has already agreed to commit $1 million towards this program. Poseidon is also exploring off-site renewable energy initiatives with some of its water agency partners as described below. - (3)B

~~L~~I. Sequestration through Reforestation.

The CCC identified as a carbon offset project the reforestation of areas in the San Diego Region impacted by the wildfires that occurred during the fall of 2007. Specifically, at the CCC's request, Poseidon has agreed to invest the initial $1.0 million it spends on offset projects in reforestation activities in the San Diego Region. Any Additionality Requirement should therefore be met, since the CCC directed that a reforestation project take place in the San Diego Region impacted by the 2007 fires. ~~In order to fulfill its reforestation commitment, Poseidon will, prior to commencement of Project operations, enter into a Memorandum of Understanding ("MOU") with a qualified organization or state or local agency, such as, by way of example, CCSE or California State Parks, which MOU will memorialize Poseidon's $1.0 million commitment to reforestation, made fully payable over five years (i.e., $200,000 per year). A fully executed MOU will be submitted to the CCC before Project operations begin. The qualified entity that administers the reforestation program will be responsible for calculating its carbon sequestration offsets available to credit against Poseidon's offset obligation under the Plan, and will do so based to the extent applicable on the urban forestry protocols currently being developed for CCAR.~~ **Poseidon will commit to using either the CARB/CCAR Forest Project Protocols or the upcoming CARB/CCAR Urban Forest Project Protocol depending on the type of project Poseidon selects.** - (1)

According to CCSE, the average cost for planting a 15 gallon suitable, drought tolerant shade tree in San Diego neighborhoods affected by the 2007 wildfires is $100 per tree, including staff time and marketing. There is no annual watering and maintenance cost required for the trees after installation, since property owners would cover these expenses. Expected survival rate would be 90%. Poseidon's $1.0 million investment in urban reforestation with shade trees is expected to yield 9,000 mature trees within 10-15 years of planting. At an annual tree sequestration rate of 60 lbs of CO_2 per tree, the annual carbon footprint reduction associated with the trees would be approximately 245 tons of CO_2 per year (the number could be up to 25% higher if energy demand reductions from trees shading homes were also included in the calculations). ~~As stated earlier, the best available urban forestry protocols will be followed by the qualified entity administering the program, and then verified in accordance with the provisions set forth herein.~~

~~M~~J. Renewable Energy Partnerships.

Poseidon is exploring the possibility of participating in renewable energy projects with its water agency partners. Table 5 presents a summary of some of the project opportunities and associated GHG offsets that are under consideration.

Table 5 - Potential Renewable Energy Partnerships

Desalination Project Public Partner/ Location	**Green Power Project Description**	**Annual Capacity of Green Energy Projected to be Generated by the Project (MWh/yr)**
City of Encinitas	95 KW Solar Panel System Installed on City Hall Roof	160
Valley Center Municipal Water District	1,000 KW Solar Panel System	1,680
Rainbow Municipal Water District	250 KW Solar Panel System	420
Olivenhain Municipal Water District / Carlsbad Municipal Water District / City of Oceanside	Various solar and hydro-electric generation opportunities	To Be Determined
Santa Fe Irrigation District	Hydropower generation facility At R.E. Badger Filtration Plant	To Be Determined
	Total Renewable Power Generation Capacity (MWh/yr)	2,260

The contract terms for each of these potential projects will be specific to the particular project. Typically, the amount paid for each project would be the market price for offsets and not necessarily the full price of the project. The offset projects will be verified through the above criteria to ensure they are real, permanent, quantifiable, verifiable, enforceable, and additional.

The total currently quantifiable electricity reduction for the proposed projects described in Table 5 is 2,260 MWh/yr, and the net indirect GHG emissions offset for the Project is projected at 800 tons of CO_2/year. Should Poseidon decide to proceed with one or more of the potential

renewable energy partnerships, the total actual energy reduction that would result would be verified by direct readings of the total electric energy produced by the Project at the partner's electric meter.

~~N~~K. Implementation Schedule.

An illustrative schedule setting forth timing for implementation of Poseidon's Plan elements, assuming regulatory approval is achieved in August 2008, is set forth in the following Implementation Schedule.

Table 6 - Implementation Schedule for the Plan

Measure	Process	Timing
Regulatory Approval		August 2008
~~Evaluation Committee Established~~**Submit First Annual GHG Report**	~~Poseidon/CCSE appoint their respective representatives and jointly select academic representative (subject to CCC Staff~~**First Annual Report*, submitted to Commission staff for review and** approval~~)~~**, shall include enough detailed emissions reductions measures to achieve a projected zero net GHG emissions balance.**	~~Approximately 18 months before~~**Before** operations commence
~~RFP Developed and Issued~~	~~Prepared by Committee consistent with Plan criteria~~	~~RFP development to begin approximately 15 months before operations commence; RFP to be issued approximately 12 months before operations commence~~
~~Offset and REC Purchases~~	~~Committee will select offset projects that meet Plan criteria; Poseidon will choose which eligible projects to fund~~	~~Estimated to take up to 12 months from issuance of RFP to completion of agreements for offset projects~~
~~Offsets/RECs purchased sufficient~~**Offset and REC Purchases Sufficient to Zero Out Estimated net indirect GHG emissions** for ~~at least~~ first year of operation**s**	~~Based on the most recently published SDG&E emission factor from CARB/CCAR and estimated electricity usage data for the first year of~~**Purchased through CCAR/CARB or a Third Party Provider, or, in the case of RECs, directly from** the ~~Project period for which offsets are purchased, as determined by CCSE subject to SDAPCD concurrence~~**provider**	~~Prior to commencement of~~**Before** operations **commence**
Annual True-Up Process **and all Subsequent Annual GHG Reports**	~~Obtain new emissions factor from the annual web-based CCAR/CARB emissions report; calculate subject year's emissions using actual billing data and new emissions factor for the subject year; calculate credit or deficit, concurred with by~~	Each year, CCSE will ~~(1) review CCAR/CARB emissions reports within 60 days of the end of the subject calendar year, or the date of publication of the emissions reports on the internet, whichever is later, and (2) calculate Poseidon's credit or deficit of~~

	~~SDAPCD;~~**Poseidon will submit its Annual GHG Report to Commission staff for review and approval. Once approved, Poseidon will** purchase additional offsets as necessary~~, or carry-forward~~ **to maintain a zero net GHG emissions balance, or bank** or sell surplus offsets**, Poseidon can demonstrate compliance over a rolling 5-year period in the Sixth Annual Report**	~~offsets~~**obtain the new emission factor from CARB or CCAR, and prepare and submit Poseidon's Annual GHG Report** within ~~120~~**180** days of ~~the end of the subject calendar year or~~ the date of publication of CCAR/CARB emissions reports~~, whichever is later~~. **If the report shows a positive net GHG emissions balance,** Poseidon **is** required to purchase offsets ~~necessary to cure any deficit within 180~~**, and submit proof of such purchase to Commission Staff, within 120** days from the date ~~an identified deficit is concurred with by~~ the ~~SDAPCD.~~ **Annual GHG Report**

***Fist Annual GHG Report will use projected electricity consumption. All subsequent Annual GHG Reports will use the previous year's electricity consumption data.**

~~O~~L. The Project's Annual Net-Zero Carbon Emission Balance.

Table 7 presents a summary of the assessment, reduction and mitigation of GHG emission for the proposed Project. As shown in the table, up to 83% of the GHG emissions associated with the proposed Project could be reduced by on-site reduction measures, and the remainder would be mitigated by off-site mitigation projects and purchase of offsets or RECs. It should be noted that on-site GHG reduction activities are expected to increase over the useful life (i.e., in the next 30 years) of the Project because of the following key reasons:

- SDG&E is planning to increase significantly the percentage of green power sources in its electricity supply portfolio, which in turn will reduce its emission factor and the Project's net indirect GHG emissions.

- Advances in seawater desalination technology are expected to yield further energy savings and net indirect GHG emission reductions. Over the last 20 years, there has been a 50% reduction in the energy required for seawater desalination.

Table 7 - Assessment, Reduction and Mitigation of GHG Emissions

Part 1: Identification of GHG Amount Emitted		
Source	**Total Annual Power Use (MWh/ year)**	**Total Annual Emissions (metric tons CO_2/ year)**
Project Baseline Design	274,400	97,165
Part 2: On-site and Project-Related Reduction of GHG Emissions		
Reduction due to High-Efficiency Design	(28,244)	(10,001)
Green Building Design	(300 to 500)	(106 to 177)
On-site Solar Power Generation	(0-777)	(0-275)
Recovery of CO_2	(NA)	(2,100)
Reducing Energy Needs for Water Recycling	(1,950)	(690)
Reduced Water Importation	(190,641)	(67,506)
Sequestration in Coastal Wetlands	(NA)	(18-~~304~~188)
Subtotal On-site Reduction Measures	(NA)	**(80,421 to ~~81,053~~80,937)**
	Net GHG Emissions	**16,422 to ~~16,112~~16,228**
Part 3: Additional Off-Site Reductions of GHG Emissions		
Sequestration Through Reforestation	(NA)	(245)
Potential Renewable Energy Partnerships	(0 - 2,260)	(0 - 800)
Subtotal Off-site Measures	(NA)	(245-1,045)
Offset and REC Purchases	(NA)	**(16,499 to 15,067)**
	Net GHG Emissions	0

(1)

EXHIBIT B

EXHIBIT B

RESPONSE TO STAFF REPORT

I. INTRODUCTION AND GHG PLAN BACKGROUND

In October 2007, Poseidon made public its voluntary commitment to account for and bring to zero the net indirect greenhouse gas ("GHG") emissions from the Project. This unprecedented commitment was followed with the development of a Climate Action Plan ("CAP") to assure that this objective will be achieved over the 30-year life of the Project. Special Condition 10 of Coastal Development Permit E-06-013 (the "Permit") requires approval of a revised Energy Minimization and Greenhouse Gas Reduction Plan (the "Plan") prior to issuance of the Permit. Specifically, Special Condition 10 states:

> Prior to issuance of the permit, the Permittee shall submit to the Commission a Revised Energy Minimization and Greenhouse Gas Reduction Plan that addresses comments submitted by the staffs of the Coastal Commission, State Lands Commission, and California Air Resources Board. The Permit shall not be issued until the Commission has approved a Revised Energy Minimization and Greenhouse Gas Reduction Plan after a public hearing.

Consistent with Special Condition 10, the CAP was reviewed by the Coastal Commission, State Lands Commission ("CSLC"), California Air Resources Board ("CARB"), the San Diego Air Pollution Control District ("SDAPCD") and, at the request of one Coastal Commissioner, the South Coast Air Quality Management District ("SCAQMD"). Poseidon also adhered to Commission Staff's draft "Greenhouse Gas Emissions Template", and revised the Plan in accordance with the template as requested by Staff. Further, on May 2, 2008, Poseidon met with representatives of the Commission, CSLC, California Energy Commission, California Department of Forestry, California Department of Park and Recreation and various agencies in the San Diego region to further discuss details regarding the Plan and its implementation, and fully complies with the requirement of Special Condition 10 that the Plan address comments from the above-referenced public agencies. A November 20, 2007 revised draft of the CAP, prepared in advance of a meeting with the CSLC, reflects changes made in response to comments from the above agencies and was attached as an exhibit to the Plan, along with Poseidon's written responses to numerous questions and comments about the CAP raised by the Coastal Commission and CSLC. The Plan has also been reviewed by the California Center for Sustainable Energy ("CCSE"), an independent third party which will be responsible for implementing elements of the Plan. The Plan was revised to incorporate and/or respond to these comments before it was submitted to the Commission for review on July 3, 2008.

After submission of the Plan on July 3, 2008, Poseidon worked with Commission Staff to reach agreement on a number of issues raised by Staff during its review of the Plan. On July 24, 2008, Commission Staff released a Staff Report recommending approval of the Plan subject to certain modifications proposed by Commission Staff. Although the Staff Report reflects certain modifications agreed between Poseidon and Staff, there are several important outstanding issues raised in the Staff Report that are addressed in detail below. As set forth below, the Plan ensures

that all net indirect GHG emissions from the Project will be offset and memorializes Poseidon's commitment to minimize energy consumption at the desalination facility. Section II highlights the Plan's performance criteria that ensure Coastal Act consistency and complete mitigation of the Project's net GHG emissions. Section III addresses certain key legal issues addressed in the Staff Report, and provides support for the adoption of Poseidon's proposed Plan.

II. THE PLAN IMPOSES ROBUST PERFORMANCE CRITERIA TO ENSURE COASTAL ACT CONSISTENCY AND COMPLETE MITIGATION OF THE PROJECT'S NET INDIRECT GHG EMISSIONS

The Plan represents a precedent-setting voluntary commitment by Poseidon to not only reduce GHG emissions and implement energy efficiency measures, but to offset all of the Project's net indirect carbon emissions to ensure net carbon neutrality. The Plan will achieve this commitment by requiring Poseidon to purchase carbon offsets and/or Renewable Energy Credits ("RECs") sufficient to zero-out any and all net indirect emissions. The Plan includes concrete and enforceable measures to ensure that net emissions are fully offset. Under the Plan, Project operations may not commence until Poseidon has purchased offsets sufficient to zero-out the estimated net indirect GHG emissions for at least the first year of the Project. The Plan also establishes preparation of an Annual GHG Report, for submission to the Commission, which will quantify the net indirect GHG emissions caused by the Project each year and determine whether or not Poseidon has a positive or negative balance of net GHG emissions for the subject year. The Plan requires Poseidon to make up any verified negative balance and submit proof of same to the Commission, within 120 days of the date the positive balance is identified in the Annual GHG Report.

We believe the Plan addresses all issues that have been raised with regard to Poseidon's voluntary commitment to offset the Project's net indirect GHG emissions. Some of the key points are discussed below.

A. The Plan Requires $55 Million Worth of State of the Art Energy Minimization Features

The Plan reflects numerous Project components designed to ensure that the Project will utilize only the minimum energy necessary, in compliance with Coastal Act Section 30253(4), which requires that new development "minimize energy consumption and vehicle miles traveled." These include increased energy efficiency measures, such as the state of the art "pressure exchanger" energy recovery technology that allows recovery and reuse of 33.9% of the energy associated with desalination's reverse osmosis process, as well as high efficiency and premium efficiency motors and variable frequency drives on the intake water pumps to improve their efficiency. The Project will implement as many Leadership in Energy and Environmental Design building design features as are reasonably practicable, and will install on-site solar power generation as one element of its green building design program if doing so meets a specific return on investment measure in the Plan. The Project will also implement carbon dioxide recovery designed to sequester carbon dioxide from Project product water to the extent it is reasonably available.

B. On-Site Solar Power Generation

Poseidon is exploring the installation of rooftop photovoltaic (PV) system for solar power generation as one element of its green building design. Brummitt Energy Associates of San Diego completed a feasibility study in March 2007 of a PV system at the Carlsbad Desalination Plant. If the solar installation is implemented, the main desalination plant building would accommodate solar panels on a roof surface of approximately 50,000 square feet, with the potential to generate approximately 777 MWh/yr of electricity. If installed, the electricity would be used by the Project and therefore would reduce the Projects electrical demand on SDG&E. The corresponding reduction of the Project's indirect emissions would be 275 tons of CO_2 per year. Poseidon is exploring other solar proposals as well, and ultimately, the electricity and corresponding GHG savings of any on-site solar installation will be documented in the Project's annual electricity usage information. Poseidon will use commercially reasonable efforts to implement an on-site solar power project if reasonably expected to provide a return on the capital investment over the life of the Project.

C. $1 Million Commitment Toward Reforestation of Areas in San Diego County Impacted by the 2007 Wildfires

Offsite reductions of GHG emissions that are not inherently part of the Project include actions taken by Poseidon to participate in offset projects that result in the cost-effective reduction of GHG emissions equal to the indirect Project emissions Poseidon is not able to reduce through other measures. At the request of the Commission, Poseidon has committed to invest the first $1 million expended on offset projects to reforest areas burned out by fires in the San Diego region in the fall of 2007, and this commitment is memorialized in the Plan. Poseidon has modified its Plan to reflect its commitment to use either the CARB/CCAR Forest Project Protocols, or the upcoming CARB/CCAR Forest Project Protocols, depending on the type of forestation project Poseidon selects.

D. All Third Party Offsets/RECs Will be Consistent with AB 32 Voluntary Offset Principles and Purchased Through Independent Third Party Providers

Under Poseidon's proposed Plan, Poseidon may elect to acquire offsets from/through the CCAR or CARB approved projects, as well as offset projects certified or offered by any existing member of the Offset Quality Initiative, which includes, CCAR, The Climate Trust, Environmental Resources Trust and The Climate Group/Voluntary Carbon Standard (the "Third Party Providers"). Consistent with Staff's recommendation, acquisition of RECs would not be limited to purchase from/through CCAR, CARB, or any other Third Party Provider.

Projects available from these Third Party Providers will be consistent with AB 32 principles. Part 4, Section 38562(d)(1)&(2) of AB 32 states that CARB regulations covering GHG emission reductions from regulated "sources" must ensure that such reductions are "real, permanent, quantifiable, verifiable, . . . enforceable [and] in addition to any greenhouse gas emission reduction otherwise required by law or regulation." While the Project is not a "source" under AB 32 and the criteria are not currently defined under implementing regulations, Third Party Providers will evaluate potential offset projects using protocols that employ the same criteria.

E. Annual Reports Will Be Submitted to Commission Staff

The California Center for Sustainable Energy ("CCSE") will prepare an Annual GHG Report that will describe and account for Poseidon's annual and cumulative balance of verified net GHG emissions reductions. The Annual GHG Report will analyze and validate (1) the annual GHG emission calculations for the Project, (2) the positive or negative balance in Poseidon's net GHG emissions, (3) the acquisition of offsets and/or RECs in accordance with this Plan, and (4) any other information related to Poseidon's efforts to mitigate GHG emissions resulting from the Project's electricity usage. Each year, CCSE will obtain the new emission factor from CCAR or CARB and prepare and submit Poseidon's Annual GHG Report within 180 days of the date of publication of CCAR/CARB emissions reports. The ultimate carbon emissions will therefore be determined based on CCAR/CARB methodology, and the Annual GHG Report will allow Commission Staff to monitor Poseidon's indirect emissions.

III. DISCUSSION OF STAFF RECOMMENDATION

After submission of the Plan on July 3, 2008, Poseidon worked with Commission Staff to reach agreement on a number of issues raised by Staff during its review of the GHG Plan. Agreed modifications to the Plan, reached before the Staff Report was released on July 24, 2008, cover the following issues:

- Procedural Framework Governing Plan's Annual Review Process.
- Procedure for verifying energy reduction resulting from energy minimization features.
- Procedure for verifying energy reduction resulting from Project's green building design features.
- Procedure for verifying energy reduction resulting from on-site solar generation, if implemented.
- Reducing the Plan's estimated annual offsets for Coastal Wetlands Sequestration from "18 to 304 metric tons CO_2 per year" to "18 to 188 metric tons CO_2 per year."
- Poseidon's commitment to use the CARB/CCAR Forest Project Protocols or the upcoming CARB/CCAR Urban Forest Project Protocol depending on the type of forestation project selected by Poseidon.
- Poseidon's agreement to use a conversion rate of 2204.6 pounds/metric ton, rather than the 2205 pounds per metric ton conversion rate used in the initial version of the GHG Plan.

These agreed modifications, together with additional changes to the Plan proposed by Poseidon to implement Staff's recommendations and/or in response to issues identified by Staff

are reflected in a redline comparison of the revised Plan against the original submitted to the Commission on July 3, 2008 (Exhibit A).

There are four key areas of disagreement between Poseidon's position and the modifications to the GHG Plan included in Staff's recommendation. First, Staff's recommendation that AB 32 principles for voluntary offsets, which apply to third party purchases of carbon offsets, should also apply to Project features such as wetlands mitigation and Project benefits such as emissions that will be avoided because the Project will displace its customers' demand, would effectively require the Project to offset its "gross" emissions, rather than "net" emissions. Poseidon believes a "gross" offset requirement is contrary to law and would result in poor public policy for a variety of reasons, as set forth below. Second, Staff's recommendation that carbon offsets available under the Plan be limited to projects verified by CCAR and/or CARB would severely constrain the carbon offset market, driving up costs and potentially rendering offsets unavailable under the Plan. Third, Staff's recommendation would eliminate a contingency needed in the event of a dysfunctional offset market. Fourth, Staff's recommendation would not permit Poseidon the flexibility to opt-in to new government carbon offset programs that may be developed, in lieu of purchasing carbon offsets, in order to fulfill its commitment under the Plan.

A. Staff's Recommendation Would Require the Project to Offset its "Gross" Rather than "Net" GHG Emissions

Commission Staff's recommendation that the Project's features and related benefits that reduce GHG emissions, such as displacement of imported water and wetlands restoration, be subject to AB 32's principles for voluntary offsets, results in a requirement that Poseidon offset its "gross" rather than "net" emissions. Poseidon believes that adoption of Staff's recommendation would (1) exceed the Commission's authority and violate the Coastal Act, (2) be inconsistent with CEQA methodology and State climate change policy, (3) violate constitutional "nexus" requirements, (4) result in "double-mitigation" of impacts, and (5) place an excessive economic burden on the Project.

1. The Commission Lacks Authority to Impose Gross Offset Requirement

a. Imposing an Offset Requirement that Exceeds Poseidon's Voluntary Commitment Would Violate the Coastal Act.

The Coastal Act authorizes the Commission to require the Project to "minimize energy consumption and vehicle miles traveled." Coastal Act § 30253(4). This requirement has been satisfied by the Plan's inclusion of $55 million in state of the art energy minimization features on site. But the Commission's authority to impose GHG emissions standards or mitigation is limited to assuring that "new development shall be consistent with requirements imposed by an air pollution control district or the State Air Resources Board as to each particular development." Coastal Act § 30253(3). The Coastal Act specifically limits the Coastal Commission's Authority:

> The State Air Resources Board and air pollution control districts... are the principal public agencies responsible for the establishment of ambient air quality and emission standards and air pollution control programs. The **provisions of [the Coastal Act] do not authorize the commission . . . to establish any ambient air quality standard or emission standard, air pollution control program or facility, or to modify any ambient air quality standard, emission standard, or air pollution control program** or facility which has been established by the state board or by an air pollution control district.

Coastal Act § 30414(a). (Emphasis Added).

Imposing an offset requirement beyond Poseidon's voluntary commitment to offset its net emissions violates § 30253(3) because, as discussed further below, AB 32 established that regulation of GHG emissions constitutes an air pollution control program and gave exclusive authority over adoption and enforcement of that program to CARB, and neither CARB nor SDAPCD have adopted such a program that applies to the Project. Moreover, imposing such a requirement would also violate §30414(a) by attempting to establish an air pollution control program.

b. Imposing an Offset Requirement that Exceeds Poseidon's Voluntary Commitment Would Violate AB 32, the Health and Safety Code and the Administrative Procedures Act

AB 32 establishes that the regulation of GHG emissions is an air pollution control program and gives CARB exclusive rulemaking authority over the implementation and enforcement of that program. *See* Health & Safety Code § 38510. Contrary to the Staff Report, CARB has not yet promulgated any requirements applicable to indirect emitters, such as the project, nor has it adopted the anticipated programs governing voluntary offsets. *See* Climate Change Draft Scoping Plan, p. 45 ("The Board would need to adopt regulations to verify and enforce voluntary reductions achieved under [any approved quantification methodologies] before they could be used for compliance purposes."). The Staff Report does not cite to a single applicable requirement. Even the voluntary "requirements" referenced in the Staff Report have not been developed and must undergo CARB rulemaking. Indeed, CARB's June 2008 Discussion Draft of its "Climate Change Draft Scoping Plan" does not anticipate that regulations applicable indirect emitters will be adopted in the near future, but instead focuses on regulations of direct emitters (which the Project is not) and incentives for voluntary reductions by indirect emitters.

Moreover, CARB's rule-making process will require public review and comment of the proposed regulations and require CARB to adopt certain findings that, among other things, the regulations are "cost-effective", "feasible" and "equitable". Health & Safety Code §38562; California Government Code § 11340-11365. When CARB adopts rules and regulations pertaining to GHG emissions and air quality, it may only "adopt these measures if they are necessary, technologically feasible, and cost-effective." Health & Safety Code Section 39602.5(a). Furthermore, the text of AB 32 also requires similar standards:

> It is the intent of the Legislature that the State Air Resources Board design emissions reduction measures to meet the statewide emissions limits for greenhouse gases established pursuant to this division in a **manner that minimizes costs and maximizes benefits** for California's economy. Section 38501. (Emphasis Added)
>
> The state board shall adopt rules and regulations in an open public process to **achieve the maximum technologically feasible and cost-effective greenhouse gas emission reductions** from sources or categories of sources, subject to the criteria and schedules set forth in this part. Section 38560. (Emphasis Added)
>
> The regulations adopted by the state board pursuant to this section shall **achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions**... Section 38560.5(c). (Emphasis Added)

Therefore, adopting Staff's recommendation and subjecting Project features and Project-related benefits, such as displacing imported water and the wetlands restoration to be funded and undertaken by Poseidon, to AB 32's principles for voluntary offsets misapplies principles to Poseidon that are applicable to CARB's regulatory authority; usurps CARB's rulemaking authority; deprives Poseidon the protections afforded by the rulemaking process; and imposes an emissions requirement that CARB has not adopted or determined satisfies the findings required under the Health & Safety Code.

2. Requiring "Gross" Offsets is Inconsistent with CEQA Principles and State Climate Change Policy

Under CEQA principles, the appropriate method for assessing the Project's impacts is to determine the net change in GHG emissions relative to existing conditions, factoring in both increases and decreases in emissions caused by the Project. Because the Project replaces water for existing uses in San Diego County, energy used to supply water to those uses today is part of the "baseline." When assessing the Project's GHG impacts, energy that would have been used to import water replaced by the Project therefore must be subtracted from the energy used by the Project, and it is appropriate to net out the Project's avoidance of GHG emissions associated with replaced water.

The Commission may properly consider netting out the Project's avoidance of GHG emissions associated with replaced water when determining the Project's impact on GHG emissions. CEQA provides that an Environmental Impact Report ("EIR") must identify and focus on the "significant environmental effects" of a proposed project. Pub. Res. Code § 21100(b)(1). Significant impacts are defined as substantial or potentially substantial adverse changes in the environment. Pub. Res. Code §§ 21068, 21100(d); 14 Cal. Code Regs. § 15382. The "environment" for the purposes of CEQA analysis refers to the "the physical environmental conditions in the vicinity of the project" – normally "as they exist when the notice of preparation [for the EIR] is published" – and is referred to as the "baseline" against which the potential

impacts of a proposed project are measured. 14 Cal. Code Regs. § 15125(a) ("This environmental setting will normally constitute the baseline physical conditions by which a Lead Agency determines whether an impact is significant.").

Contrary to Staff's position, CEQA does not require a project proponent to guarantee that a project's preservation of a nonrenewable resource will not be undone by the consumption of that resource by another project. Nor is any such "guarantee" required under CEQA when a lead agency makes significance conclusions regarding environmental impacts. "A public agency can make reasonable assumptions based on substantial evidence about future conditions without guaranteeing that those assumptions will remain true." *Environmental Council*, 142 Cal. App. 4th at 1036. "CEQA only requires that an EIR discuss 'the significant environmental effects of *the proposed project*' including in the analysis consideration of the environmental benefits that will be achieved from key project components. *Village of Laguna of Laguna Beach, Inc. v. Board of Supervisors*, 134 Cal. App. 3d 1022, 1030 (1982) (original emphasis) (citing Pub. Res. Code § 21100(a)). In *Village of Laguna*, the court upheld an EIR's environmental impact analysis that was predicated on reasonable assumptions regarding benefits from "integral portions of the proposed project" such as a transportation corridor, preservation of a Greenbelt, and 25% affordable housing commitments. *Id.* at 1029-30. The court drew a parallel between its holding that an EIR is not required to evaluate the environmental consequences that would occur if a project's key assumptions prove to be erroneous, and other opinions in the cumulative impacts context holding that lead agencies are not required to evaluate related project actions unless they are imminent. *Id.* at 1030-31; *see also Banker's Hill, Hillcrest, Park West Community Preservation Group v. City of San Diego*, 139 Cal. App. 4th 249, 275 (2006) (city properly considered project design features in determining that a project would not have a significant traffic safety impact). Based on the foregoing precedent, the Commission may rely on the Project's avoidance of GHG emissions associated with replaced water when assessing the Project's impact on GHG emissions.

Nor does CEQA require the Project to assess and account for impacts that would result if the 56,000 AFY of water replaced by the Project is ultimately imported to the region for another hypothetical use. Instead, the end user of that water will be required by CEQA and other applicable laws to address any emissions (or other) associated impacts. This fundamental proposition was affirmed in *Environmental Council of Sacramento v. City of Sacramento,* 142 Cal. App. 4th 1018 (2006), where the court rejected plaintiffs' claims that a Conservation Plan's baseline assumption that 15,000 acres would remain agricultural was "unfunded, voluntary and unenforceable" in violation of CEQA, and held that even if a variety of prerequisite steps were ultimately taken to develop the agricultural land, the project proponents "would remain subject to another CEQA review and be required to evaluate the effects of the proposed additional development on the effectiveness of the Conservation Plan." *Environmental Council*, 142 Cal. App. 4th at 1036. The court further ruled that the baseline assumptions regarding the environmental benefits of the project were properly considered in the environmental analysis because they were supported by substantial evidence, and that the lead agency appropriately did not speculate about the impacts that could result from the project should those reasonable assumptions not be realized. *Id.* at 1035-37.

When the Project is built, it will result in an increase in energy use due to the electricity that will be purchased from SDG&E to operate the desalination facility, and a decrease in energy

use because the Project's water will replace water that would otherwise have been imported to the Project's customers. Under CEQA principles, the Project's impact should be assessed by considering the net contribution of GHG emissions relative to the existing baseline, factoring in both the increases and decreases in energy use that the Project will cause. *See* CEQA Guidelines § 15126.2(a) ("In assessing the impact of a proposed project on the environment, the Lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is issued . . .").[1]

The Project will produce 56,000 acre-feet per year of desalinated water that will directly replace, on a one-for-one basis, water that would have been imported to the Project's customers from the State Water Project. Indeed, the Project is part of the Metropolitan Water District's (MWD) Seawater Desalination Project, which requires that "Project production for any beneficial use must replace an existing demand or prevent a new demand on Metropolitan's imported supplies." The MWD has agreed to subsidize the purchase of Project water at $250 per acre foot ($14 million per year) so long as the water "reduces demand for imported supplies", and MWD will have audit rights to confirm this replacement and certify Project water production and deliveries.

The California Energy Commission and MWD have each publicly supported elements of Poseidon's GHG Plan, as evidenced by the letters from these agencies to the Commission. Specifically, the California Energy Commission supports Poseidon's plan to mitigate its net carbon emissions, i.e., to "mitigate the carbon emissions from the increases in electricity required to deliver the project's water to customers, as compared with the 'baseline' of current electricity required to serve those customers with State Water Project water," which is "consistent with how the Energy Commission, itself, analyzes the significance of impacts under CEQA . . ." Exhibit C, California Energy Commission Letter, July 29, 2008, p. 2. Also, the Metropolitan Water District confirms that "water agencies receiving desalinated supplies from the Project must demonstrate that the water offsets an equivalent amount of water imported from Metropolitan," and that it is therefore "appropriate for the Project's GHG Plan to be based on offsetting net carbon emissions because San Diego County will use 56,000 acre-feet per year less imported water upon Project start up." Exhibit D, MWD Letter, July 29, 2008, p. 1.

A requirement that Poseidon mitigate impacts of any additional water imported to the San Diego region for separate uses, in addition to mitigation that the end user of that water would be required to undertake, would result in "double mitigation" of impacts. This would substantially increase the costs of desalination, reduce its viability as an alternative water source, and may significantly undercut MWD's $250 per-acre foot subsidy and potentially render the Project uneconomic, as discussed further below.

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[1] The State Office of Planning and Research's ("OPR") June 19, 2008 Technical Advisory on CEQA and Climate Change recommends that "[w]hen assessing a project's GHG emissions, lead agencies must describe the existing environmental conditions or setting, without the project, which normally constitutes the baseline physical conditions for determining whether a project's impacts are significant." OPR is in the process of preparing specific guidance for use in determining thresholds of significance for GHG emissions impacts, in consultation with CARB, and new CEQA Guidelines regarding the analysis and mitigation of GHG emissions in CEQA documents are to be adopted on or before January 1, 2010.

3. There is No Constitutional "Nexus" Justifying a Requirement That Poseidon Offset Carbon For New or Expanded Uses of Imported Water Unrelated to the Project

Under two landmark opinions issued by the United States Supreme Court – *Nollan v. California Coastal Commission* and *Dolan v. City of Tigard* – public agencies may not constitutionally impose conditions on development unless there is a "nexus" between the condition and the project's environmental impact and the condition is "roughly proportional" to the impact being addressed. These constitutional requirements are explicitly recognized in CEQA's implementing regulations.[2] In this case, there is no nexus for requiring Poseidon to offset GHG emissions that may result at some uncertain point in the future should the water that Poseidon is displacing be imported for some unrelated use. Requiring Poseidon to address impacts from water importation unrelated to its Project plainly does not satisfy the nexus test, and would thus violate constitutional norms and exceed the Commission's authority.

4. A Gross Offset Requirement Would Result in "Double-Mitigation"

CEQA principles would not require the Project to assess and account for impacts that would result if the 56,000 AFY of water replaced by the Project is ultimately imported to the region for another hypothetical use unrelated to the Project. Instead, any new end user of the replaced water will be required by CEQA and State climate change policy to address the associated impacts from any water that continues to be imported to San Diego for new or expanded uses, in the event such imports occur. Two recent cases that were initiated by the California Attorney General illustrate that the Office of the Attorney General has already begun to enforce State climate change policy by ensuring that carbon emissions are enforced within CEQA.[3] Moreover, on August 24, 2007, the California Senate passed Senate Bill 97 into law, which requires the Office of Planning and Research ("OPR") to prepare guidelines for the mitigation of GHG emissions as required by CEQA. OPR has publicly stated that these guidelines will be available by January 2009. The implementation of these measures by OPR and their enforcement by the California Attorney General ensure that any end users of the replaced water will be required to address its carbon emissions impacts under CEQA. Requiring Poseidon *and* the new water users to mitigate such impacts would result in double-mitigation that would substantially increase the costs of desalination, reduce its viability and constitute poor public policy.

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[2] CEQA Guidelines § 15126.4(a)(4)(A), (B) ("There must be an essential nexus (i.e. connection) between the mitigation measure and a legitimate government interest. Nollan v. California Coastal Commission, 483 U.S. 825 (1987); and the mitigation measure must be 'roughly proportional' to the impacts of the project. Dolan v. City of Tigard, 512 U.S. 374 (1994)").

[3] *See* People of the State of California ex. Rel. Attorney General Edmund G. Brown v. County of San Bernardino, Case No. CIVSS 700329 (San Bernardino County Superior Court, April 12, 2007); Attorney General Edmund G. Brown's appeal to the Contra Costa County Board of Supervisors of the Planning Commission's approval of the Clean Fuels Expansion Project of ConocoPhillips Company (filed May 18, 2007).

Staff's position, if accepted, would be contrary to constitutional precepts and CEQA principles and would result in bad policy results. For example, under Staff's view, a water supply analysis in an EIR could not rely on a project's commitment to employ water conservation features, such as low flush toilets, to reach a conclusion that the project would have a less than significant impact on GHG emissions. Instead, Staff would require the EIR to demonstrate that the foregone water resulting from these conservation measures would not be used by some other hypothetical project. Similarly, Staff's view would prevent a utility company that replaced 50% of its existing power purchased from coal-fired power plants with power from a large solar PV project from taking credit for this substantial investment in solar power (which reduced its carbon footprint by 50%), just because the coal-fired power could subsequently be sold to another customer. It would not be reasonable or fair in this situation to continue to hold the first company responsible for the coal-fired emissions after they were being used by a different company. Staff's position is untenable and would frustrate resource conservation efforts and CEQA's scheme of project-specific environmental review and mitigation of impacts.

5. A Gross Emissions Offset Requirement Would Place an Excessive Economic Burden on the San Diego Region's Water Supply

Poseidon's proposed GHG Plan is estimated to cost approximately $61 million, including $55 million for on-site energy minimization features and $6 million for "net" carbon offsets. By requiring "gross" offsets, Staff's proposal would increase the cost of the Plan's carbon offset requirement from $6 million to $27 million. Additionally, Staff's proposal to restrict the carbon offset market to CCAR-verified credits would severely limit the availability of offsets, and could increase carbon offset costs by 2.5 times or more, increasing the cost of the gross offset requirement to $66 million or more. Combined, these two components of Staff's proposal would increase the costs of the GHG Plan from approximately $61 million to $121 million, or more.

The Project is already subject to significant mitigation costs from the Commission. The Plan currently includes $90 million worth of mitigation costs, including $55 million for state of the art energy minimization features, $6 million for "net" carbon offsets, and $29 million for the Marine Life Mitigation Plan. Staff's proposal could raise the Commission-imposed mitigation costs from approximately $90 million to $150 million. These costs are in addition to significant mitigation costs already imposed on the Project by the City of Carlsbad during its review of the Project.

If the gross emissions offset requirement is misapplied as the Staff recommends, the additional economic burden on Poseidon and the San Diego Region's water users could prove to be prohibitive with respect to the Carlsbad Desalination Plant.

B. Staff's Proposal Would Dramatically Restrict Poseidon's Access to the Carbon Offset Market

Commission Staff recommended a revised offset acquisition process limiting the availability offsets to projects verified by CCAR and/or CARB and registered in the Climate Action Reserve (CAR). This would severely constrain the availability of carbon offsets by limiting Poseidon to just 0.16% of the domestic market (which, as noted, could increase costs by

2.5 times or more), and could result in an unavailability of offsets sufficient to achieve the goals of the GHG Plan.

The voluntary market of offsets is 1/200th of the global market ($330 million out of $66.4 billion traded in 2007) and CCAR verified projects is only a part of the voluntary market, and only a small fraction of the larger global market. CCAR represents only a narrow slice of the offset project world in terms of types of projects and volume. The U.S. trading market is in its infancy and it is maturing and evolving, with new organizations and tools constantly emerging.

As of now, CCAR has only three protocols: livestock/dairy, landfill, and reforestation. CARB has only one protocol: forestry. CCAR and CAR have only two projects listed in registry and they are both fully subscribed. The extent to which offsets will be available through CCAR and CAR at costs that are equal to domestic and international prices for offsets is uncertain. The limited choices and uncertainty of these agencies could translate to unavailability of offset projects and high costs of such projects, which unless modified as proposed by Poseidon, threatens Poseidon's ability to meet its obligation under the Plan.

Poseidon is absolutely committed to acquiring the necessary offsets from CCAR and/or CARB exclusively to the extent these entities have offsets that are both available and affordable. Poseidon has demonstrated this commitment by having recently become a member of the CCAR. However, as discussed above, the presently available offset projects verified by CCAR and/or CARB and registered in the CAR are limited and the future availability and affordability offsets offered by these entitles is uncertain. This uncertainty raises questions regarding the workability of staff's proposed revision of the Plan.

Accordingly, Poseidon proposes in its revised Plan to allow offsets to be purchased from/through and verified by three additional respected third party providers that are members of the Offset Quality Initiative: The Climate Trust, Environmental Resources Trust and The Climate Group/Voluntary Standard. Poseidon proposes a mechanism allowing it to seek Commission approval for additional Third Party Providers to be added to this list, with payment of a $5,000.00 fee for the submission of such a request. Criteria for the Commission's approval of an entity as an additional Third Party Provider is that it be an independent and non-affiliated entity that adheres to substantially similar principles and evaluation criteria for high quality offsets as the three Third Party Providers listed above.

C. Staff Recommends Elimination of a Contingency for Market Dysfunction

Staff recommended eliminating a contingency proposed by Poseidon to address potential dysfunction in the carbon offset market. The contingency provides that Poseidon may pay into an escrow fund, in lieu of acquiring offsets, in amount equal to $10 per metric ton (plus inflation) for each ton not previously offset, if: (i) offset projects in an amount necessary to mitigate the Project's net indirect GHG emissions are not reasonably available; (ii) the "market price" for carbon offsets or RECs is not reasonably discernable; (iii) the market for offsets/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. Monies paid into the escrow fund would be spent on offsets as they became available.

Staff has expressed concern that Poseidon would be permitted to unilaterally "forego mitigation when it deems market conditions to be unfavorable." Staff Report, page 13. Poseidon has resolved this concern by modifying its Plan so that Poseidon must apply to the Executive Director for a determination that any of the above contingencies exist, and only after approval of such a request by the Executive Director (or the Commission upon challenge of Executive Director denial) would Poseidon be permitted to deposit monies into the escrow fund.

Given the scarcity of available offset projects and the uncertainty of the agencies providing such projects, a contingency plan is a crucial element in ensuring that Poseidon can remain carbon neutral when faced with a dysfunctional carbon offset market.

D. Staff Opposes Flexibility for Poseidon to Use New Government Carbon Offset Mitigation Programs that May Become Available

Staff is also opposed to a provision in Poseidon's Plan which would allow Poseidon to opt into a carbon offset, fee or other mitigation program developed by SDAPCD, SCAQMD, CARB, SDG&E or any other relevant government agency. Such a provision is important to provide Poseidon with flexibility to implement its commitment to zero out the Project's net indirect GHG emissions. Poseidon has proposed that this flexibility be provided to ensure that, all times, the most efficient means for offsetting the Project's net GHG emissions are being undertaken.

EXHIBIT C

STATE OF CALIFORNIA – THE RESOURCES AGENCY

ARNOLD SCHWARZENEGGER, Governor

CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512
www.energy.ca.gov

July 29, 2008

Patrick Kruer, Chairman
California Coastal Commission
North Central Coast District
45 Fremont, Suite 2000
San Francisco, CA 94105-2219

John Chiang, Chairman
California State Lands Commission
100 Howe Ave Suite 100 South
Sacramento, CA 95825-8202

Re: Carlsbad Seawater Desalination Project CDP Application No. E-06-013
Energy Minimization and Greenhouse Gas Reduction Plan

Dear Chairman Kruer and Chairman Chiang:

After sending you both my July 18, 2008 letter regarding Poseidon's Carlsbad Desalination Project's *Energy Minimization and Greenhouse Gas Reduction Plan* (Plan), as revised July 3, 2008, I had an opportunity to meet with representatives of Poseidon Resources. The meeting, which occurred on July 23, 2008, was informative and left me with clarifications and a better understanding of the Plan. Consequently, by this letter, I wish to retract the comments in my July 18, 2008 letter.

First, it is notable that the Poseidon Project demonstrates that desalination of ocean and brackish water is becoming an important component of the state's strategy to meet its water needs. Indeed, the Energy Commission has long studied ocean and brackish water desalination and invested in research to improve technologies and address issues associated with desalination. The Poseidon Project is consistent with our efforts to improve the efficiency and environmental effects of desalination and lower its costs to customers. Towards those ends, the project and the plan for mitigation are laudable.

At the July 23, 2008 meeting, representatives of Poseidon Resources and I discussed the desalination project, the City of Carlsbad's environmental impacts report (EIR), and the comments in my July 18, 2008 letter. Subsequently, Poseidon Resources sent me additional information and a letter on July 25, 2008, further amplifying what we had discussed. Based on clarifying information and further consideration of the environmental review done on the project, I am persuaded that Poseidon's commitment

to offset 100 percent of its "net" or incremental increase in greenhouse gas emissions above baseline conditions is reasonable under the California Environmental Quality Act (CEQA). Indeed, the approach is consistent with how the Energy Commission, itself, analyzes the significance of impacts under CEQA, for example, in its power plant licensing cases.

More specifically, I understand the "baseline" under CEQA is typically the existing conditions as of the start of environmental analysis of the project. Accordingly, Poseidon's Plan to mitigate the carbon emissions from the increase in electricity required to deliver the project's water to customers, as compared with the "baseline" of current electricity required to serve those customers with State Water Project water, is supportable by the Energy Commission. Any implication in the Energy Commission's comments that Poseidon should further mitigate impacts yet to be ascertained from the diversion of State Water Project water for use elsewhere is not intended. Poseidon's Plan to mitigate the project's indirect impacts, as discussed, appropriately focuses on what is reasonably foreseeable, which is what I understand CEQA requires in an environmental analysis.

Finally, Poseidon's point about both the City's and the Coastal Commission's environmental analyses concluding the project would not cause growth inducing impacts is salient. In deference to the City's EIR and the Coastal Commission's substantiated conclusions, I accept the point. Please consider the comments in my July 18, 2008 letter regarding the project's growth-inducing impacts as having been withdrawn. Understandably, such comments fuel unnecessary speculation of impacts, which departs from the reasonably foreseeable impacts that Poseidon proposes to mitigate. Moreover, the Plan for mitigation represents an approach acceptable to the permitting agencies. The Energy Commission, with no evidence to contradict the Plan, takes no issue with it.

The representatives I met with also informed me that Poseidon has applied to become a member of the Climate Action Registry and is committed to following the accounting protocols for reporting emissions and reductions. Compliance with the accounting protocols enhances the credibility of Poseidon's Plan. I see Poseidon's membership with the Registry as an important step, not only in implementing the Plan, but also in supporting the role of the Registry in furthering the accountability of emissions reductions used to meet the state's goals under AB 32.

We appreciate the efforts of Poseidon Resources to address our concerns and those of your staff to consider the points we have raised regarding this important project. If you have any questions, please contact me at (916) 654-4996.

Sincerely,

MELISSA JONES
Executive Director

cc: Paul D. Thayer, Executive Officer, SLC
Peter M. Douglas, Executive Director, CCC
Mike Chrisman, Secretary for Resources
Jackalyne Pfannenstiel, Chairman, California Energy Commission
Pat Perez, Assistant Director, California Energy Commission
Lorraine White, Senior Water-Energy Lead, California Energy Commission
Cynthia Bryant, Governor's Office of Planning and Research
Walter Winrow, President and COO, Poseidon Resources
Peter MacLaggan, Senior Vice President, Poseidon Resources

EXHIBIT D

MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Executive Office

July 29, 2008

Mr. Peter Douglas
Executive Director
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219

Dear Mr. Douglas:

Carlsbad Desalination Project's Energy Minimization and Greenhouse Gas Reduction Plan

The Metropolitan Water District of Southern California (Metropolitan) and the San Diego County Water Authority are statewide leaders in water conservation, recycling, and brackish groundwater desalination. However, in addition to these demand management achievements, our resource strategy benefits from other progressive actions including seawater desalination. Metropolitan's responsibility to the public is to manage future challenges including population growth, climate change impacts, increased uncertainty in the Bay-Delta, and earthquake disruptions to imported water pipelines.

The proposed Carlsbad Seawater Desalination Project (Project) would help secure supply reliability in Southern California by mitigating against these uncertainties. Metropolitan has previously supported and continues to support the project.

Metropolitan has committed to providing incentives of $250 per acre-foot for locally-developed seawater desalination supplies that offset the demands for imported supplies, up to $14 million annually to support the Project. To receive the incentive, water agencies receiving desalinated supplies from the Project must demonstrate that the water offsets an equivalent amount of water imported from Metropolitan.

Coastal Commission staff have questioned if it is appropriate for the Carlsbad Desalination Project's proposed Energy Minimization and Greenhouse Gas Reduction Plan (GHG Plan) to account for the fact that seawater desalination would lessen the need for additional water to be imported into the region. Metropolitan believes it is appropriate for the Project's GHG Plan to be based on offsetting net carbon emissions because San Diego County will use 56,000 acre-feet per year less imported water upon Project start up. By net, we mean the difference in energy related emissions required for moving water through the State Water Project compared to operating the seawater desalination project.

Offsetting demand for imported water is a condition for receiving Metropolitan's financial incentives. Reduced demand will assist Metropolitan's ability to store wet-year water, improve operational flexibility and reduce requirements for dry-year water transfers delivered through State Water Project infrastructure. If the Project is not approved, regional demand for imported water will not be reduced by the 56,000 acre-feet per year to be produced by the Project.

The conditions placed on the Carlsbad Desalination Project set an important precedent for seawater desalination development in California. In that light, Metropolitan supports the Project's GHG Plan, which we believe will achieve carbon neutrality by offsetting the Project's net greenhouse gas emissions.

Thank you for considering our comments.

Yours truly,

Jeffrey Kightlinger
General Manager

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cc: Ms. Maureen A. Stapleton
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W5a

CONDITION COMPLIANCE

July 24, 2008

To: Commissioners and Interested Parties

From: Peter Douglas, Executive Director
Alison Dettmer, Deputy Director
Tom Luster, Staff Environmental Scientist
Sara Townsend, Analyst

Regarding: **Condition Compliance for CDP No. E-06-013 –** Poseidon Resources (Channelside), LLC; **Special Condition 10**: Submittal of a Energy Minimization and Greenhouse Gas Reduction Plan

SUMMARY

On November 15, 2007, the Commission conditionally approved CDP E-06-013 for Poseidon Resources (Channelside), LLC (Poseidon) for construction and operation of a desalination facility to be located adjacent to the Encina Power Plant in Carlsbad, San Diego County. The Commission imposed as part of its approval **Special Condition 10**, which required Poseidon to submit for further Commission review and approval, an Energy Minimization and Greenhouse Gas Reduction Plan (the Plan) (see the full text and requirements of **Special Condition 10** in Section 2.0 below).[1]

On July 7, 2008, Poseidon submitted to Commission staff its proposed Plan (see Exhibit 1). This report provides staff's analysis of the Plan, staff's evaluation of whether the Plan conforms to **Special Condition 10** as described in the Findings, and staff's recommendation as to whether the Commission should approve the Plan.

In brief, staff's analysis shows that the Plan as submitted does not conform to **Special Condition 10**. However, if modified as described herein, staff believes the modified Plan would conform to **Special Condition 10**. Staff therefore recommends the Commission **approve** the Plan, as modified herein. The primary modifications staff has identified as being necessary for Plan approval are summarized below and are further detailed in Sections 1.1 and 4.0 of this memorandum.

[1] The Commission's approval of this CDP also included **Special Condition 8**, which required Poseidon to submit for Commission review and approval a Marine Life Mitigation Plan. That Special Condition and Poseidon's submitted plan are evaluated in a separate staff report under Item W5b of the August 6, 2008 Commission hearing.

Staff recommends the Plan be modified as follows:

1) Implement the Plan using the protocols, criteria, and mechanisms provided by Assembly Bill 32 (AB 32):
   a. Use CARB and/or CCAR approved protocols and mechanisms for all emission reduction measures proposed to ensure emissions from Poseidon's purchased electricity are "net zero".
   b. Join the CCAR "Climate Action Reserve" and other entities that require the use of CARB- or CCAR-approved protocols to implement the Plan's emission reduction measures and provide necessary accounting of those measures.
2) Submit annual reports for Executive Director review and approval that show the results of Poseidon's verified emission reduction measures as determined pursuant to CARB- or CCAR-approved verification processes.
3) Modify the Plan's GHG template to conform to AB 32-based review processes.
4) Within 60 days of the Commission's approval of this modified Plan, submit for the Executive Director's review and approval a revised Plan that includes these modifications.

Staff's main recommendation – that the Plan be implemented using AB 32 protocols for verifying greenhouse gas reductions – is based on recommendations from the California Air Resources Board, the San Diego Air Pollution Control District, the California State Lands Commission, and the California Energy Commission. The other recommendations are meant to help Poseidon and the Commission implement the Plan in a manner consistent with the Commission's approval and with AB 32.

With these modifications, staff believes Poseidon's Plan would conform to **Special Condition 10** and applicable provisions of the Commission's Findings. Further, staff believes that the modified Plan would also be fully consistent with the goals and provisions of AB 32. By using CARB- and CCAR-approved methods and protocols to quantify and verify its emission reductions, Poseidon would also be able to participate in the state's approved program, which will allow it to transition smoothly to any future AB 32 regulations that may apply to its facility.

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Exhibit 1 – Carlsbad Seawater Desalination Project: July 3, 2007 cover letter and *Energy Minimization and Greenhouse Gas Reduction Plan*

Exhibit 2 – Assembly Bill 32

1.0 MOTION & RESOLUTION

Motion:

> *"I move that the Commission approve the Energy Minimization and Greenhouse Gas Reduction Plan attached to the staff recommendation as Exhibit 1, if modified as shown in Section 1.1 below, as compliant with* ***Special Condition 10*** *of CDP E-06-013."*

Resolution to Approve:

> *The Commission hereby finds that the compliance plan titled "Carlsbad Seawater Desalination Project: Energy Minimization and Greenhouse Gas Reduction Plan" prepared and submitted by the permittee, Poseidon Resources (Channelside) LLC, dated July 3, 2008, if modified as shown in Section 1.1 of the July 24, 2008 Commission staff report, is adequate, if fully implemented to comply with* ***Special Condition 10*** *of CDP E-06-013.*

Staff Recommendation:

> Staff recommends a "**YES**" vote, which will result in the **approval** of the modified plan as compliant with **Special Condition 10** and adoption of the motion, resolution, and findings herein. The motion passes only by an affirmative vote of a majority of the Commissioners present. Staff's recommended modifications are provided in Section 1.1 below, and are further detailed in Section 4.0 of this memorandum. If these recommended modifications are not incorporated into the Plan, staff recommends the Commission find the Plan, as submitted, does not conform to **Special Condition 10** and staff would therefore recommend the Plan be denied.

1.1 RECOMMENDED MODIFICATIONS TO POSEIDON'S PROPOSED PLAN

1) Implement the Plan using the protocols, criteria, and mechanisms provided by Assembly Bill 32 (AB 32)[2]:
   a) Use California Air Resources Board (CARB) and/or California Climate Action Registry (CCAR) approved protocols and mechanisms for all emission reduction measures[3] proposed to ensure emissions from Poseidon's purchased electricity are "net zero".
   b) Join the CCAR "Climate Action Reserve" and other entities that require the use of CARB- or CCAR-approved protocols to implement the Plan's emission reduction measures and provide necessary accounting of those measures.

2) Submit annual reports for Executive Director review and approval that show the results of Poseidon's verified emission reduction measures as determined pursuant to AB 32-approved review processes.

3) Modify the Plan's GHG template to conform to AB 32-based review processes.

4) Within 60 days of the Commission's approval of this modified Plan, submit for the Executive Director's review and approval a revised Plan that includes these modifications.

2.0 STANDARD OF REVIEW

The Commission must determine whether the subject plan conforms to **Special Condition 10** of CDP E-06-013, which states:

> *PRIOR TO ISSUANCE OF THE PERMIT, the Permittee shall submit to the Commission a Revised Energy Minimization and Greenhouse Gas Reduction Plan that addresses comments submitted by the staffs of the Coastal Commission, State Lands Commission, and the California Air Resources Board. The permit shall not be issued until the Commission has approved a Revised Energy Minimization and Greenhouse Gas Reduction Plan after a public hearing.*

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[2] See Exhibit 3: The Global Warming Solutions Act of 2006, also known as **Assembly Bill 32** (AB 32) – from http://www.arb.ca.gov/cc/docs/ab32text.pdf (last visited June 30, 2008).

[3] This would not include measures Poseidon implements at the desalination facility to avoid or reduce its need for purchased electricity. These measures include, for example:

- Poseidon's installation of a high efficiency energy recovery system;
- Its use of green building design components; and,
- Installation of solar photovoltaics on the facility's roof to generate electricity for Poseidon's use.

Each of these measures, if implemented, would result in the facility needing less purchased electricity, which would therefore reduce the GHG emissions for which Poseidon's emission reduction measures would be needed.

As shown in the Findings and in the Commission's November 15, 2007 hearing transcript, Poseidon offered as part of the project to make its facility operations "carbon neutral" or "net carbon neutral".[4] It offered a Climate Action Plan to implement this part of its project. The Commission required through **Special Condition 10** that Poseidon submit a revised Plan to ensure conformity to applicable Coastal Act provisions. In its Findings, the Commission stated that this Plan was to "ensure that Poseidon minimizes electricity consumption of the project and mitigate any effects of the project's emissions on coastal resources…" The Plan was to ensure that the project would "avoid, minimize, or mitigate adverse impacts to a wide range of coastal resources, including public access, recreation, marine resources, wetlands, ESHA, agriculture, natural land forms, and existing development associated with its minimized and mitigated energy consumption." The Commission further found that, with such a Plan, the project would be consistent with the requirements of Section 30253(4) and other relevant Coastal Act provisions related to minimizing energy use and mitigating any adverse effects on coastal resources from greenhouse gas emissions.

2.1 APPLICABILITY OF AB 32

In reviewing the proposed Plan for conformity to **Special Condition 10** and the Commission's Findings, staff used as guidance the state's primary statute applicable to greenhouse gas emissions reductions. The Global Warming Solutions Act of 2006 (AB 32) is California's landmark greenhouse gas (GHG) emissions reduction law (see Exhibit 2). It sets a statewide target to reduce GHG emissions in the state to 1990 levels by 2020. This target will be achieved through the implementation of regulations, policies, and programs that lead to maximum technically feasible and cost-effective emission reduction measures.

Role of the California Air Resources Board (CARB): AB 32 recognizes CARB as the agency primarily responsible for implementing its provisions. Last year, CARB adopted regulations that require certain entities to report and verify their GHG emissions and to monitor those emissions and enforce compliance.[5] In June 2008, CARB released its draft AB 32 implementation scoping plan. AB 32 also directs CARB to adopt regulations on GHG limits and emissions reductions measures by January 2011 and to implement those regulations by January 2012.

CARB is anticipating that it will first focus on developing regulations for the largest sources of GHGs and that it will phase in additional sources later. However, reaching the statewide target will also depend on GHG emitters that are not initially regulated to voluntarily undertake actions to reduce or mitigate their GHG emissions. In recognition of this need, AB 32 includes several provisions to adopt acceptable methods for verifying and quantifying voluntary emissions reductions that may be used to meet the AB 32 goals. For example, AB 32 requires CARB to

[4] These terms generally refer to a broader range of emissions than are addressed in Poseidon's Plan. For example, "carbon neutral" is defined as providing mitigation for the amount of carbon emitted from both direct and indirect emissions. Poseidon's Plan identifies only those indirect emissions that would result from Poseidon's use of electricity generated by, and purchased from, SDG&E, and proposes mitigation for just those emissions. Similarly, the analyses in the Findings and in this memorandum are focused only on identifying, avoiding, reducing, offsetting, or otherwise mitigating just those indirect emissions rather than the full suite of emissions that would need to be addressed to determine whether the project was "carbon neutral".

[5] *See* Air Resources Board, Mandatory Reporting of GHG Emissions, http://www.arb.ca.gov/regact/2007/ghg2007/ghg2007.htm (last visited June 30, 2008).

adopt a plan by 2009 that identifies how the state will meet its goal of reducing emissions to their 1990 levels, and that plan is to, among other things, "identify opportunities for emission reductions measures from all verifiable and enforceable voluntary actions, including, but not limited to, carbon sequestration projects and best management practices".[6] Further, the regulations AB 32 requires be adopted by 2011 are to "ensure that entities that have voluntarily reduced their greenhouse gas emissions prior to the implementation of this section receive appropriate credit for early voluntary reductions".[7] In support of this policy, AB 32 also requires CARB to adopt methods to quantify voluntary GHG emission reductions.[8]

Relevance of AB 32 to Special Condition 10 and Poseidon's proposed Plan: AB 32 clearly anticipates and applies to the types of emission reductions that will be needed from entities like Poseidon – that is, entities that may not initially be regulated directly through AB 32, but that are implementing measures meant to conform to other requirements and be consistent with AB 32. The statute applies to all sources of GHG emissions and, as mentioned above, explicitly includes electricity consumed in the state (see AB 32, Section 38530(b)(2)). Any new, large, significant electricity load will make reaching this statewide target more difficult. Poseidon's desalination facility will be a new, large, significant electricity consumer, thereby increasing the electricity sector's GHG emissions at a time when a statewide effort is underway to dramatically decrease this source of emissions. By implementing its proposed Plan using AB 32 guidance and regulations, Poseidon will likely minimize GHG emissions in a manner that is well integrated with AB 32's framework.

Poseidon's desalination facility is not anticipated to be included in the initial regulatory mechanism CARB plans to implement in 2012. Therefore, although Poseidon's proposed GHG emissions reduction measures are required pursuant to **Special Condition 10** of its coastal development permit, they would be reviewed as "voluntary" measures for purposes of AB 32. As noted above, AB 32 establishes provisions to ensure such "voluntary" measures meet AB 32 standards, and CARB has already adopted some regulations to ensure voluntary measures are consistent with AB 32, and is planning to adopt additional similar regulations. For example, CARB has established protocols for voluntary forestry projects meant to sequester carbon, and Commission staff and other agencies have recommended that Poseidon follow these protocols to implement its $1 million purchase of trees for carbon sequestration. These protocols will allow Poseidon's anticipated carbon "credits" to be quantified and verified and meet other applicable AB 32 provisions. CARB is expected to approve additional methodologies and protocols during the next several years that will allow Poseidon to participate in other verified emission reduction programs.

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[6] See Section 38561(f).

[7] See Section 38562(b)(3).

[8] Section 38571 states: "*The state board shall adopt methodologies for the quantification of voluntary greenhouse gas emission reductions. The state board shall adopt regulations to verify and enforce any voluntary greenhouse gas emission reductions that are authorized by the state board for use to comply with greenhouse gas emission limits established by the state board. The adoption of methodologies is exempt from the rulemaking provisions of the Administrative Procedure Act (Chapter 3.5 (commencing with Section 11340) of Part 1 of Division 3 of Title 2 of the Government Code).*"

CARB is also scheduled in 2009 to require emission reporting from electricity-generating facilities, including San Diego Gas & Electric Company (SDG&E), from which Poseidon plans to purchase its electricity.[9] In recognition of this requirement, Commission staff recommended to Poseidon that the emission factors[10] and emission reductions in its Plan be based on the mandatory reports provided to CARB. For the period before these mandatory reports are required, Commission staff accepted Poseidon's proposal to use SDG&E's voluntary reports to the California Climate Action Registry.

AB 32 also recognizes the California Climate Action Registry (CCAR) as one of the mechanisms to be used to implement the state's GHG emission reduction programs. CCAR is a non-profit public organization initiated by the State of California to serve as a voluntary GHG registry to encourage and protect early actions to reduce GHG emissions. CCAR has established the Climate Action Reserve, which is specifically designed for the voluntary GHG emission reduction market and provides accurate and transparent measurement, verification, and tracking of GHG reduction projects and their inventories of GHG reduction tons, thus assuring a high degree of reliability. Commission staff has recommended that Poseidon join CCAR's Reserve and use it in implementing its proposed emission reduction measures.

Based on the above, it is appropriate for the Commission to use AB 32 and its implementing regulations, protocols criteria, and mechanisms as the basis for its review and approval of Poseidon's Plan. This approach is supported by other agencies that have been involved in Commission staff's review, including CARB, the San Diego Air Pollution Control District (SDAPCD), the State Lands Commission (SLC), and the California Energy Commission (CEC), all of which requested that Poseidon use AB 32 provisions to develop and implement its Plan. Staff believes that implementing Coastal Act requirements using the terms, criteria, and mechanisms provided through AB 32 would result in the Plan's conformity to **Special Condition 10**. Additionally, staff believes this would ensure the Plan is consistent with the state goals and targets expressed in AB 32, and would result in maximum credible and verifiable emissions reductions.

[9] Personal communication between Commission staff and CARB staff on June 5, 2008. According to CARB staff, SDG&E will be required to report to CARB by June 2009 its 2008 GHG emissions. The emission report is to be verified by an accredited third party by December 2009, and by February 2010, annual reports will be available to the public.

[10] An emission factor represents the average amount of GHG emissions produced from an electricity generator's portfolio of energy sources as measured in pounds per megawatt-hour. Each type of electricity generator has a different emission factor – for example, a natural gas-fired power plant may produce 800 pounds of GHG emissions for every megawatt-hour of electricity it produces, and a coal-fired plant may produce 2000 pounds of GHG emissions for the same amount of electricity. SDG&E's emission factor varies each year based on where it purchases or generates its electricity – for example, its emission factor this year was about 780 pounds per megawatt-hour and its previous emission factor was less than 600 pounds per megawatt-hour. SDG&E currently certifies its annual emission factor using CCAR, and will be required to certify it through CARB starting in 2009.

Relationship between AB 32 and the Coastal Act: Staff believes this approach would also be fully consistent with Coastal Act Section 30414. For example, Section 30414(c) states:

> *The State Air Resources Board and any air pollution control district may recommend ways in which actions of the commission or any local government can complement or assist in the implementation of established air quality programs.*

As noted above, both CARB and the SDAPCD are implementing provisions of AB 32 and have recommended the Commission and Poseidon use AB 32 as the basis of the proposed Plan. Staff believes the Commission's action requiring the use of these provisions would also be consistent with Section 30414(a), which recognizes that CARB and the state's regional air pollution control districts are the principal agencies responsible for establishing air quality and emission standards. Section 30414 states, in relevant part, that the Coastal Act does not authorize the Commission "to establish any ambient air quality standard or emission standard, air pollution control program or facility, or to modify any ambient air quality standard, emission standard, or air pollution control program or facility which has been established by the state board or by an air pollution control district." The Commission's requirement that Poseidon implement its Plan in a manner consistent with AB 32 ensures that the Plan is consistent with and supportive of programs established by CARB or the SDAPCD, and does not establish or modify emissions standards or programs. Further, this approach is consistent with AB 32's Section 38598(a), which states that "nothing in this division shall limit the existing authority of a state entity to adopt and implement greenhouse gas emissions reduction measures." As noted in the Findings, the Commission determined that Poseidon must mitigate for its indirect GHG emissions and their effects on coastal resources.

Applicability of AB 32 goals, terms, criteria, and related mechanisms to ensure emissions reductions: Commission staff incorporated into its review several of the relevant terms defined in AB 32, including the following:

- "***Greenhouse gas***" or "***greenhouse gases***": Section 38505(g) states that greenhouse gas or gases "includes all the following gases: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexaflouride."

- "***Statewide greenhouse gas emissions***": Section 38505(m) defines these as "the total annual emissions of greenhouse gases in the state, including all emissions of greenhouse gases from the generation of electricity delivered to and consumed in California, accounting for transmission and distribution line losses, whether the electricity is generated in state or imported. Statewide emissions shall be expressed in tons of carbon dioxide equivalents."

  Commission staff recognizes that the desalination facility will contribute to "statewide greenhouse gas emissions" because its baseline electricity use will result in about 90,000 tons of CO_2 each year. As noted in AB 32, any new, large, significant electricity load, such as that represented by Poseidon's desalination facility, will unless adequately mitigated, adversely affect the electricity sector's ability to achieve statewide targets.

- "***Emissions reduction measure***": Section 38505(f) defines these as "programs, measures, standards, and alternative compliance mechanisms authorized pursuant to this division, applicable to sources or categories of sources, that are designed to reduce emissions of greenhouse gases."

  Commission staff reviewed Poseidon's Plan based on this definition, which encompasses all the proposed measures, offsets, reductions, or other methods Poseidon proposes in its Plan – that is, all the measures Poseidon proposes to meet a "net zero" emission level for its use of purchased electricity are considered by AB 32 to be "emission reduction measures". As noted throughout this memorandum, three of the measures Poseidon currently proposes would not be subject to this review, because they result in direct reductions of Poseidon's purchased electricity use and therefore reduce the amount of emissions that must be accounted for – these include Poseidon's installation of a high efficiency energy recovery system, its use of green building design components, and its installation of solar photovoltaics on the facility roof to generate electricity for Poseidon's use.

AB 32 also identifies six criteria to be used to determine whether proposed GHG emission reduction measures are adequate to ensure conformity to AB 32. The criteria, at Section 38562(d) require that any measures approved by CARB are "real", "permanent", "quantifiable", "verifiable", "enforceable", and are "in addition to" any GHG emission reduction otherwise required by law or regulation and any other GHG emissions reduction that otherwise would occur. While AB 32 does not define these criteria, CARB staff indicated that they are defined in other state air regulations and recommended those existing definitions be used, such as:[11]

- "Real" and "in addition to": Real or additional emission reductions are those that have actually occurred, not emissions that could have been emitted but were not or are avoided emissions. This means that the emission reductions result from actions taken that are beyond the course of normal activity such that the emission reductions are not considered "business as usual."

- "Permanent": Permanent means that the life of the emission reductions is reasonably established and commensurate with the proposed use of the credits. Projects should be "irreversible"; that is, the reductions achieved should not be subject to backsliding or vulnerable to changes in external conditions.

- "Quantifiable": Quantifiable means that the amount of the emission reductions can be measured with reasonable certainty.

- "Verifiable": Verification means the process used to ensure that an operator's emissions data report is free of material misstatement and complies with ARB's procedures and methods for calculating and reporting GHG emissions.

[11] CARB staff stated examples of criteria definitions were available from various sources, such as 2008 modifications to its regulations for reporting GHG emissions at (17 CCR Subchapter 10), San Diego Air Pollution Control District's August 2004 operating permit regulations (Regulation XIV, Title V), August 2004 proposed rulemaking to control GHG emissions from motor vehicles, etc.

- "Enforceable": Enforceable means that the reductions can be independently verified and are legally binding. Enforcement is an essential element of any alternative compliance strategy. Projects thus must be accessible to inspection by California staff.

As recommended by CARB and other agencies, Commission staff provided in its review of Poseidon's proposed Plan an initial application of these six criteria to assess whether Poseidon's suggested emissions reduction measures might conform to AB 32. Staff's conclusions, in Section 4.0 of this memorandum, suggest that several of Poseidon's proposed measures would likely conform to the criteria; however, as reflected in staff's recommendations, the actual assessment of Poseidon's proposals should be done by a certified independent verifier as established through AB 32.

In sum, Commission staff, on advice from CARB and other agencies, have recommended that Poseidon implement its Plan consistent with the provisions, guidance, and regulations established pursuant to AB 32, and that the Commission base its approval and ongoing review of Poseidon's Plan on the guidance provided by AB 32.

3.0 PLAN DEVELOPMENT AND REVIEW

Between November 2007 and July 2008, Commission staff worked with Poseidon and with other agencies to develop an acceptable Plan to present for Commission review and approval. Commission staff's research included determining appropriate GHG accounting methods, evaluating current and pending legislation related to GHG emission reductions, identifying and assessing the effectiveness of various measures meant to avoid or reduce GHG emissions, and other similar issues. Commission staff met with Poseidon and agency representatives at various times during the process to discuss various proposed modifications to the Plan, determine the feasibility and effectiveness of proposed measures, and develop other aspects of the Plan. Throughout the process, Commission staff provided comments and guidance to Poseidon, and Poseidon provided several drafts of its proposed Plan.

This review process included Commission staff hosting a May 2, 2008 interagency meeting in Carlsbad. The purpose of the meeting was to inform other involved agencies about the status of Poseidon's Plan and to seek input and guidance from those agencies about the proposed approach, about potential mitigation projects for Poseidon to develop, and to establish contacts for ongoing review. Along with Commission staff and Poseidon, participants included:

California State Lands Commission
California Energy Commission
California State Parks
California Department of Forestry & Fire Protection
San Diego Air Pollution Control District
San Diego Association of Governments
San Diego County Water Authority
City of Carlsbad
City of Vista

Through this process, and with the assistance and guidance from these agencies as well as CARB, Commission staff developed the recommended modifications described in Sections 1.1 and 4.0 of this memorandum for Poseidon to incorporate into in its Plan. The recommendations also provide the basis for the analyses herein.

On July 7, 2008, Commission staff received the currently proposed Plan for review by the Commission.

4.0 ANALYSIS FOR CONFORMITY TO ADOPTED FINDINGS & SPECIAL CONDITION 10

Special Condition 10 states:

> *PRIOR TO ISSUANCE OF THE PERMIT, the Permittee shall submit to the Commission a Revised Energy Minimization and Greenhouse Gas Reduction Plan that addresses comments submitted by the staffs of the Coastal Commission, State Lands Commission, and the California Air Resources Board. The permit shall not be issued until the Commission has approved a Revised Energy Minimization and Greenhouse Gas Reduction Plan after a public hearing.*

The Findings state that this Plan is to ensure that Poseidon minimizes its electricity consumption and mitigates any effects of indirect emissions resulting from the project's use of purchased electricity on coastal resources to ensure conformity to Coastal Act Section 30253(4) and other applicable Coastal Act provisions.

Section 4.1 below provides a description of the submitted Plan's key elements. The Plan is attached as Exhibit 1. **Sections 4.2** through **4.4** describe staff's recommended modifications needed to ensure the Plan conforms to the Adopted Findings and **Special Condition 10**. Each section also includes concerns Poseidon expressed about the recommendations and staff's response to those concerns. Briefly, the recommended modifications described herein are:

- **Section 4.2:** Implement the Plan using the protocols, criteria, and mechanisms provided by Assembly Bill 32 (AB 32):
  - ***Section 4.2.1*** – Use CARB and/or CCAR approved protocols and mechanisms for all emission reduction measures proposed to ensure emissions from Poseidon's purchased electricity are "net zero".
  - ***Section 4.2.2*** – Join the CCAR "Climate Action Reserve" and other entities that require the use of CARB- or CCAR-approved protocols to implement the Plan's emission reduction measures and provide necessary accounting of those measures.

- **Section 4.3:** Submit annual reports for Executive Director review and approval that show the results of Poseidon's verified emission reduction measures as determined pursuant to AB 32-approved review processes.

- **Section 4.4:** Modify the Plan's GHG template to conform to AB 32-based review processes.

The key recommended modifications are those in Section 4.2 related to the Plan's use of AB 32. Poseidon states that parts of its Plan are meant to be consistent with AB 32, and although staff's analysis shows that the Plan, as submitted, is not yet consistent with AB 32's protocols regarding reducing and offsetting GHG emissions, staff believes it would be if modified as recommended

in Section 4.2. The recommendations in Sections 4.3 and 4.4 would change the process Poseidon has proposed for Plan review in a manner consistent with AB 32 provisions and in a way that would ensure the Commission has adequate certainty and oversight over ongoing condition compliance. Similarly, staff's recommendation in Section 1.1 that Poseidon submit a revised Plan that incorporates these modifications would assist the Commission in ensuring conformity to its decision.

4.1 PLAN DESCRIPTION

Poseidon's submitted Plan includes three main steps for the desalination facility to accomplish "net zero" emissions from its electricity use:

1) Identify the amount of indirect GHG emissions: determine by multiplying annual electricity use (as measured by electric meter readings of delivered electricity) by the annual emission factor certified by CARB or CCAR.
2) Identify on-site and project-related reduction of indirect GHG emissions. This includes seven proposed measures to reduce emissions.
3) Identify mitigation options to offset any remaining indirect GHG emissions. These include:
    - A proposed process for obtaining, reviewing, approving, and validating emission reduction projects, including formation of a committee and database.
    - An annual process to "true-up" emission reduction credits
    - A contingency approach if Poseidon determines no GHG emission reduction projects are reasonably available.
    - A contingency approach if new GHG emission reduction regulatory programs are created.
    - Examples of potential emission reduction projects.
    - A general description of Poseidon's reforestation sequestration project.
    - A table reflecting Poseidon's projected annual net-zero GHG emissions balance.
    - An implementation schedule that includes an annual report to the Commission describing Poseidon's conformity to the above provisions.

The Plan's focus is on the process by which Poseidon will select and implement its emission reduction measures. Because Poseidon does not anticipate operating its facility for about three years, and because the policies, regulations, and acceptable emission reduction measures are expected to change significantly over the next three years and beyond, many of the measures described in the Plan are subject to change and additional review. Given these likely changes, Commission staff concurs with Poseidon that the Commission's approval should emphasize the process by which Poseidon will identify, select, and verify its emission reduction measures. However, as shown in the discussions below, staff believes the Plan, as submitted, is not adequate to ensure conformity to **Special Condition 10** or the Commission's direction as expressed in the Findings.

4.2 RECOMMENDATION – USE PROVISIONS OF AB 32

Staff's central issue of concern is an inability to verify the Plan's emission reductions against accepted protocols and criteria. This results in a lack of assurance that the proposed Plan will provide the stated level of mitigation – that is, a "net zero" increase in indirect GHG emissions from the facility's operations.

Staff's key concerns include the following:

- The process proposed in the Plan would not provide verification for most of the proposed emission reduction measures, including those that Poseidon is relying on for the bulk of its emission reductions. The Plan creates a new category of emission reductions – "project-related" measures – and suggests these should be evaluated under criteria unique to this project. Staff believes these measures, regardless of the term used to describe them, would best be reviewed using the protocols, mechanisms, and criteria established by CARB or CCAR pursuant to implementation of AB 32.

- The Plan would establish a committee to select and verify Poseidon's emission reduction measures; however, this committee would not provide the degree of third-party independence identified in AB 32 as necessary for emission reduction verification.

- The Plan does not provide assurance that adequate emission reductions would ever be implemented due to its contingency provision that would allow Poseidon to forego mitigation when it deems market conditions to be unfavorable. In lieu of mitigation, Poseidon states that it would deposit $10 per ton of unmitigated GHG emissions into an escrow account, but the Plan does not describe how these funds would be used.

Staff's recommended modifications are meant to resolve these and other concerns and to ensure the Plan would conform to **Special Condition 10**. Further, staff believes these modifications will provide Poseidon with the certainty and flexibility needed for it to select and implement verifiable emission reduction measures to operate at its anticipated "net zero" level of indirect electricity-related emissions and to be credited for its efforts as part of the state's approach under AB 32. These are each described in detail below.

4.2.1 Use CARB and/or CCAR approved protocols and mechanisms for emission reduction measures.[12]

As noted in Section 2.0, AB 32 includes a number of provisions meant to apply to emission reductions measures such as those Poseidon is proposing. Staff's primary recommendation is

[12] This would not include measures Poseidon implements at the desalination facility to avoid or reduce its need for purchased electricity. These measures include, for example:

- Poseidon's installation of a high efficiency energy recovery system;
- Its use of green building design components; and,
- Installation of solar photovoltaics on the facility's roof to generate electricity for Poseidon's use.

Each of these measures, if implemented, would result in the facility needing less purchased electricity, which would therefore reduce the GHG emissions for which Poseidon's emission reduction measures would be needed.

that Poseidon's Plan use these provisions to ensure its proposed emission reduction measures fit within the framework California has established for this type of project. The existing or anticipated protocols and mechanisms being implemented by CARB and CCAR pursuant to AB 32 can be used to evaluated Poseidon's proposed emission reduction measures.

The ongoing implementation of AB 32 has jumpstarted the voluntary emission reduction market in California, although similar to the situation elsewhere, it is not always clear that measures being proposed are real or verifiable. AB 32 addresses this issue by requiring CARB to develop approved methodologies and protocols for the voluntary market that meet the AB 32 criteria – that the emission reduction measures are real, permanent, quantifiable, verifiable, enforceable, and additional to any reduction that would otherwise occur. By 2012, CARB will have a list of CARB-approved project protocols and CARB-accredited verifiers to identify valid emission reductions. CARB has already approved a forestry-project protocol and is in the process of reviewing additional protocols.

CCAR, like CARB, also approves project protocols and third-party verifiers for the voluntary GHG emission reduction market, pursuant to AB 32.[13] CCAR currently has certified project protocols for forestry, landfill, and livestock projects. As mentioned above, CARB has already approved the forestry protocol and is in the process of reviewing the CCAR-approved livestock project protocol. CCAR estimates that by 2009 it will have approved several additional CCAR project protocols and it has just issued a Request for Proposals to begin work on ten new project protocols. Staff notes that CCAR's approved protocols have received strong support within California.[14]

Poseidon is concerned that some of its proposals do not yet have accepted protocols and it would not be able to get emission reduction credits for them – that is, Poseidon has proposed a number of emission reduction measures that cannot yet be quantified or verified using adopted protocols. Staff notes, however, that one of Poseidon's key proposals – its $1 million tree purchase for sequestration – does have approved protocols in place, and that other protocols are being developed over the next several years before Poseidon plans to start operations. Further, and importantly, California's emission reduction framework is based on accepting only those emission reduction measures that can be verified. Verification relies on there being accepted protocols by which to determine the validity, extent, and effectiveness of any emission reduction measure. For example, Poseidon has offered to verify the emission reductions it expects from its proposed imported water offsets by providing Commission staff a contract from the Metropolitan Water District that confirms the offsets; however, staff is uncertain as to whether this contract would adequately verify that these expected emission reductions would occur. Staff suggests, therefore, that the Commission address this concern *not* by accepting proposed measures for which there is a current lack of approved protocols, but by ensuring that whatever measures

[13] Section 38530(b)(1) directs CARB to, "where appropriate and to the maximum extent feasible, incorporate the standards and protocols developed by the CCAR."

[14] For example, the CARB Chair, Mary Nichols, has stated that, "the Registry's Forest Protocols are among the world's most accurate and environmentally sound, which led the State of California to adopt them." See also Climate Action Reserve at: http://www.climateregistry.org/resources/docs/press-releases/climate-action-reserve-release_final_1A.doc (last visited July 19, 2008), which includes statements of support from Linda Adams, Secretary of the California Environmental Protection Agency and Chair of CCAR, and others.

Poseidon proposes in its Plan are verified using approved protocols. Staff believes the best way to ensure Poseidon's Plan provides the intended result – that is, to mitigate for Poseidon's indirect GHG emissions – is for the Plan to be based on the protocols and mechanisms that are already approved or that will be approved pursuant to AB 32. Staff therefore recommends that Poseidon select emission reduction measures and project proposals for which there are CARB- or CCAR-approved project protocols and purchase emission reduction credits approved by CARB- or CCAR-accredited verifiers.

Additionally, for proposed emission reduction measures that may be unique to Poseidon and do not have approved protocols, there are mechanisms in place that would allow Poseidon to propose protocols for CARB to approve. CARB has already initiated this "one-off" process for ten projects, and this same process is available for Poseidon to ensure its proposed measures conform to provisions of AB 32.

Poseidon has also stated that the AB 32 criteria are not meant to apply to some of its proposed measures, and has additionally contended that it is not required to adhere to those criteria. Its Plan references at least three different sets of criteria to apply to its various emission reduction proposals – those in AB 32, some based on the Kyoto Protocols, and a set of Evaluation Criteria developed for its Plan. It is not clear from the Plan which criteria would apply to the various proposed emission reduction measures, as the criteria sometimes overlap or are contradictory.

As noted above, AB 32's criteria are expected to apply to a wide range of emission reduction measures, including those implemented for both regulatory and voluntary efforts, which include Poseidon's. Staff therefore recommends that Poseidon's Plan use one set of criteria – those established in AB 32 – to apply to all the measures it proposes to mitigate for indirect GHG emissions resulting from its use of purchased electricity. This would allow Poseidon's Plan to have a single, clear, and applicable set of criteria by which its emission reduction measures could be verified and incorporated into California's emission reduction framework. Trying to implement the Plan using three sets of different and sometimes overlapping or conflicting criteria would likely cause confusion and uncertainty and would not allow some of Poseidon's proposed measures to be adequately reviewed and verified. By relying on these criteria and on CARB's and CCAR's implementation of AB 32, the Commission will have adequate assurance that Poseidon's modified Plan will conform to **Special Condition 10**. The Commission will also be assured that its review will be consistent with the framework the state has selected for addressing the need to reduce GHG emissions, and Poseidon will be able to validate its GHG emission reduction efforts as part of California's program.

Poseidon's Plan also includes a proposed contingency mechanism to be used if offset projects or mitigation measures are not reasonably available (see Section 3.h of the Plan, pages 24-25). It suggests that Poseidon would not implement some emission reduction measures under certain conditions: 1) if there are not enough projects available; 2) if the market price for offsets or RECs is not reasonably discernable; 3) if the market price for those mitigation measures is suffering from significant market disruptions or instability; or, 4) if the price of those measures has escalated to a level Poseidon deems economically infeasible. If any of those circumstances occur, Poseidon proposes, instead of funding projects or offsets, to deposit money into an escrow account equal to $10 per ton of offsets needed.

Staff believes this provision would prevent the Plan from conforming to **Special Condition 10**, as it could result in far fewer emission reductions than the Commission anticipates Poseidon will provide. The Plan does not define the terms used (e.g., "reasonably discernable", "market disruptions", etc.) and Poseidon has not established at what level various measures might become economically infeasible. Additionally, determining when the various conditions might occur appears to be solely under the purview of Poseidon. The Plan does not identify how funds in the escrow account would be used or who would decide their use. These characteristics each prevent the Commission from having the necessary level of assurance that Poseidon will adequately mitigate for its indirect GHG emissions. Further, because AB 32 requires CARB to consider cost-effectiveness in developing its regulations and protocols, this contingency is likely not necessary. The broad application of the AB 32 processes to a wide variety of projects should ensure that Poseidon's proposed measures are not held to a different standard than others in the emission reduction marketplace.

4.2.2 Join CCAR's "Climate Action Reserve" or other entities using CARB- or CCAR-approved protocols

Poseidon's Plan proposes that Poseidon form a committee to evaluate its emission reduction measures and account for its total emission reduction credits. The committee would include three members – Poseidon, the California Center for Sustainable Energy (CCSE), which is Poseidon's consultant, and a member from academia with expertise in energy or air regulatory policy and emission reduction. The committee would identify, evaluate, and select suitable projects, subject to Poseidon approval. Projects implemented would be included in an annual report to be presented to the SDAPCD and to Commission staff for review and approval. The Plan also proposes that the SDAPCD provide annual oversight of the committee's work and manage a publicly-accessible database showing how the Plan is being implemented.

Staff believes this proposal is overly complex and is duplicative of procedures and mechanisms already available to Poseidon through CCAR. Additionally, the committee would not represent the independent third-party review identified in AB 32 as a necessary component for verifying emission reductions. Further, as currently proposed, the committee would be charged with implementing the Plan using its three sets of criteria, which, as described above, do not ensure adequate validation of the proposed measures. Staff notes, too, that Poseidon's proposal relies on the SDAPCD to perform a role for which it has not yet agreed, and staff therefore recommend the Commission not impose this requirement on the SDAPCD.

As an alternative, staff recommends that Poseidon join CCAR's Climate Action Reserve, which is a program within CCAR, so that it could it implement its Plan through the Reserve. The Reserve was designed specifically for the voluntary GHG emission reduction market. The Reserve provides account holders accurate and transparent measurement, verification, and tracking of GHG reduction projects and inventories of their GHG reductions, thus assuring a high degree of integrity.

Poseidon has been supportive of CCAR – it stated that it has already joined CCAR, and as noted in the Adopted Findings, it used CCAR's certified emission factor in determining its total expected GHG emissions. By participating in CCAR's Reserve program, Poseidon will have at least two additional ways to pursue fully verified GHG emission reduction measures – it can elect to purchase CCAR-approved emission reduction credits, and it can request implementation

of CCAR-approved emission reduction project proposals. For example, Poseidon could immediately begin implementing its forestry project in San Diego through the Reserve. The Reserve will ensure Poseidon follows CARB/CCAR-approved forestry protocols, will provide independent third-party verification of results, and will provide an accounting mechanism for emission reductions credits Poseidon accrues over time. Poseidon would maintain an account with the Reserve that provides verification of the amount of emission reduction credits it has accrued in the form of public reports available on the Reserve's website, which would provide a high level of transparency.

Poseidon has expressed concerns to Commission staff that the Reserve may not have enough emission reduction credits and project protocols available to meet Poseidon's needs. However, according to the Reserve, it has had available about 200,000 "carbon reduction tons"[15] so far in 2008 and expects to have at least five million available in 2012 when Poseidon plans to start operations.[16] Even if Poseidon were to rely entirely on the Reserve for all its necessary emission reduction credits (about 90,000 tons per year), this would represent less than two percent of the Reserve's expected supply.

Summary and Conclusion: In sum, staff recommends above that Poseidon's Plan be implemented through the available and applicable provisions of AB 32, as carried out by CARB and CCAR. This would ensure the Plan conforms to the provisions of the Commission's approval of Poseidon's coastal development permit and would allow Poseidon's Plan to be part of the state's approach to reducing its GHG emissions. In recognition of Poseidon's concerns that implementation of AB 32 may not proceed at a pace necessary to provide Poseidon with its needed emission reduction credits, Poseidon may at any time apply to the Commission for a permit amendment to modify its Plan to address this issue. Staff notes, however, that consultation with the various agencies has identified a number of AB 32-based protocols and mechanisms that are already in place or expected to be in place before Poseidon begins its operations and needs to implement its Plan.

4.3 SUBMIT ANNUAL REPORTS FOR COMMISSION STAFF REVIEW AND APPROVAL

Poseidon's Plan includes an annual review process to ensure that the Commission has an opportunity to review the results of Poseidon's implemented emission reduction measures each year and to determine conformity to **Special Condition 10**. Poseidon has agreed to provide an annual report for Executive Director review and approval (see Exhibit 1 insert: July 24, 2008, *Memorandum to File – Plan Modifications Agreed to By Poseidon and Commission Staff*). The type and amount of emission reductions is expected to vary each year based on the annual update of SDG&E's certified emission factor and the amount of electricity Poseidon purchases each year from SDG&E.

[15] A "carbon reduction ton" or "CRT" is the Reserve's unit of measure used as a credit for reducing GHG emissions by one ton.

[16] Personal communication with the CCAR Reserve's Joel Levin, Vice President for Business Development, on July 22, 2008.

However, the current Plan proposes a complex reporting method involving different timelines, committee review, RFP submittals and approvals, accounting methods, and other elements. Staff's recommendation is that Poseidon's annual report submittal be based on the review and timing needed to conform to the particular AB 32-related review processes Poseidon chooses to implement its Plan. The report should describe and account for all approved emission reduction measures and include both an annual and cumulative balance of Poseidon's net emissions; however, the particular mechanisms to develop each year's report may vary. For example, as a member of the Reserve described above, Poseidon will have its own account that reflects the amount of emission reductions credits it owns. This accounting service negates the need for Poseidon's committee, SDAPCD, or Commission staff to perform this function. It also eliminates the need for the committee to serve as a third-party reviewer, as this would be provided by the Reserve.

If Poseidon were to join the Reserve and use its accounting services for the annual report, the review process would be simplified and would provide Commission staff with a full account of its emission reduction credits that are CARB and/or CCAR-approved. This recommendation would also provide the Commission with the necessary level of assurance that Poseidon's Plan is conforming to **Special Condition 10** and meeting the Commission's expectations as expressed in its Findings.

4.3 MODIFY THE PLAN TEMPLATE TO CONFORM TO AB 32-BASED REVIEW PROCESSES.

Commission staff provided to Poseidon a template to use as the basis for its Plan. Staff's template included three main steps:

1) Determine expected indirect GHG emissions based on electricity use.
2) Identify measures that will reduce electricity use at the facility or use renewable energy and thereby reduce indirect GHG emissions.
3) Identify emission reduction measures that will be used to offset any remaining indirect emissions.

In its submitted Plan, Poseidon modified the template in a manner that would remove some of its proposed emission reduction measures from the necessary review process. For example, Part II of staff's template was meant to include only those measures that would directly avoid or reduce the amount of electricity purchased for use at the desalination facility (such as those described in footnote xx of this memorandum). Poseidon modified this step to include "project-related" measures that involve potential electricity or emission reductions that may occur elsewhere or through the actions of other entities. The submitted Plan also suggests that these "project-related" measures added to Part II be automatically deducted from the facility's baseline electricity use to derive its net use and net GHG emission level. However, staff's review shows that these measures would not necessarily reduce electricity use or emissions from the facility and are therefore appropriate to include in Part III of the template to ensure they are verified through the elements of AB 32 described above in Section 4.2.2.

Similar to the previous recommendation, staff recommends Poseidon modify the template in a manner appropriate to the AB 32-approved processes Poseidon chooses to implement for its Plan. As long as the template shows that all emission reduction measures needed to account for the indirect emissions from Poseidon's purchased electricity use are reviewed using the

protocols, mechanisms, criteria, and other elements approved pursuant to AB 32, the Commission will have the necessary level of assurance that ongoing implementation of the Plan can conform to the provisions of **Special Condition 10**.

POSEIDON RESOURCES

July 3, 2008

VIA E-MAIL AND OVERNIGHT DELIVERY

Chairman Kruer and Honorable Commissioners
California Coastal Commission
North Central Coast District
45 Fremont, Suite 2000
San Francisco, CA 94105-2219

Re: Carlsbad Desalination Project CDP Application No. E-06-013
Energy Minimization and Greenhouse Gas Reduction Plan

Dear Chairman Kruer and Honorable Commissioners:

Poseidon Resources (Channelside) LLC ("Poseidon") is writing to request that the Coastal Commission approve Poseidon's Energy Minimization and Greenhouse Gas Reduction Plan ("Plan"), attached hereto as Exhibit A, at its August 2008 meeting.[1] The Plan is submitted pursuant to Special Condition 10 of Coastal Development Permit E-06-013 (the "Permit"), which requires approval of a revised Energy Minimization and Greenhouse Gas Reduction Plan prior to issuance of the Permit. As detailed below, the Plan satisfies the requirements of Special Condition 10, minimizes the Carlsbad Desalination Project's ("Project") energy use, ensures that all net indirect Greenhouse Gas ("GHG") emissions from the Project will be offset, and is consistent with the California Environmental Quality Act ("CEQA") and the provisions of Assembly Bill 32 ("AB 32") regarding carbon offset programs. The Plan should therefore be approved by the Commission at its August 2008 meeting.

This letter discusses the key elements of the Plan and the key issue that will be presented to the Commission at its August hearing, i.e., whether the Commission should and has the authority to require the Project to offset its "net" GHG emissions consistent with Poseidon's voluntary commitment to do so, or whether the Commission may require Poseidon to offset the Project's gross GHG emissions, which Poseidon believes would exceed the Commission's authority, be inconsistent with the principles of the California Environmental Quality Act ("CEQA"), and unnecessary to fully mitigate the Project's indirect impact on GHG emissions.

I. THE PLAN SATISFIES SPECIAL CONDITION 10

In October 2007, Poseidon made public its voluntary commitment to account for and bring to zero the net indirect GHG emissions from the Project. This unprecedented commitment was followed with the development of a Climate Action Plan ("CAP") to assure that this

[1] Exhibit A includes the Plan, but not the appendices, which we are providing separately to Commission Staff. We would be happy to provide individual Commissioners with the appendices at their request.

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Project Office: 4600 Carlsbad Boulevard, Carlsbad, CA 92008

objective will be achieved over the 30-year life of the Project. Consistent with the requirements of Special Condition 10, the CAP was reviewed by the Coastal Commission, State Lands Commission ("CSLC"), California Air Resources Board ("CARB"), the San Diego Air Pollution Control District ("SDAPCD") and, at the request of one Coastal Commissioner, the South Coast Air Quality Management District ("SCAQMD"). Poseidon also adhered to Commission Staff's recently circulated draft "Greenhouse Gas Emissions Template", and revised the Plan in accordance with the template as requested by Staff. Further, on May 2, 2008, Poseidon met with representatives of the Commission, CSLC, California Energy Commission, California Department of Forestry, California Department of Park and Recreation and various agencies in the San Diego region to further discuss details regarding the Plan and its implementation. The Plan has been revised to incorporate and/or respond to these comments, and fully complies with the requirement of Special Condition 10 that the Plan address comments from the above-referenced public agencies. A November 20, 2007 revised draft of the CAP, prepared in advance of a meeting with the CSLC, reflects changes made in response to comments from the above agencies and is attached as an exhibit to the Plan, along with Poseidon's written responses to numerous questions and comments about the CAP raised by the Coastal Commission and CSLC. The enclosed Plan has also been reviewed by the California Center for Sustainable Energy ("CCSE"), an independent third party which, as discussed below, will be responsible for administering and implementing elements of the Plan.

The Commission's November 15, 2007 approval of the Permit included Special Condition 10, which states: "prior to issuance of the permit, the Permittee shall submit to the Commission a Revised Energy Minimization and Greenhouse Gas Reduction Plan that addresses comments submitted by the staffs of the Coastal Commission, State Lands Commission, and California Air Resources Board. The Permit shall not be issued until the Commission has approved a Revised Energy Minimization and Greenhouse Gas Reduction Plan after a public hearing."

As set forth below, the Plan ensures that all net indirect GHG emissions from the Project will be offset and memorializes Poseidon's commitment to minimize energy consumption at the desalination facility.

II. THE PLAN IMPOSES ROBUST PERFORMANCE CRITERIA TO ENSURE COASTAL ACT CONSISTENCY AND COMPLETE MITIGATION OF THE PROJECT'S NET INDIRECT GHG EMISSIONS

The Plan represents a precedent-setting voluntary commitment by Poseidon to not only reduce GHG emissions and implement energy efficiency measures, but to offset all of the Project's net indirect carbon emissions to ensure net carbon neutrality. The Plan will achieve this commitment by requiring Poseidon to purchase carbon offsets and/or Renewable Energy Credits ("RECs") sufficient to zero-out any and all net indirect emissions.[2] The Plan includes

[2] To the extent the Evaluation Committee (described in Section II.A of this letter) determines, subject to the concurrence of the Commission, that carbon offsets or RECs are: (i) not reasonably available on the open market; (ii) the "market price" for carbon offsets or RECs is not reasonably discernable; (iii) the market for offsets/RECs is suffering from significant

concrete and enforceable measures to ensure that net emissions are fully offset. Under the Plan, Project operations may not commence until Poseidon has purchased offsets sufficient to zero-out the estimated net indirect GHG emissions for at least the first year of the Project. The Plan also establishes an annual third party accounting process to quantify the net indirect GHG emissions caused by the Project each year, and to determine whether or not Poseidon has sufficient credits in its GHG offset bank to cover that year's emissions, with Poseidon required to make up any verified deficit in its GHG offset bank within six months.

We believe the Plan addresses all issues that have been raised by Commission Staff and other public agencies with regard to Poseidon's voluntary commitment to a net carbon-neutral Project. We address some of the pertinent points below.

A. The Plan Will Require Offset Credits Purchased By Poseidon to Comply with AB 32 Standards

The Plan provides for the issuance of an initial Request for Proposal ("RFP") for carbon offset projects and RECs, which will mandate that any offset project comply with comprehensive standards including those set forth in AB 32. Specifically, the RFP is intended to ensure that the reductions from any offset projects are "real, permanent, quantifiable, verifiable . . . enforceable" and "in addition to any greenhouse gas emission reduction otherwise required by law or regulation, and any other greenhouse gas emission reduction that otherwise would occur." Cal. Health & Safety Code § 38562(d)(1), (2). The Plan sets forth specific Project Requirements and Evaluation Criteria that the RFP will include to ensure offset projects meet this standard, and the Evaluation Criteria include: (1) cost effectiveness, (2) additionality, (3) reliability of proposing entity, (4) reliability of project concept, (5) a monitoring and verification plan, (6) consideration of financial risk, (7) the enforceability of the project, and (8) the location of the project, with preference given to local and regional projects. An Evaluation Committee consisting of one representative each for CCSE and Poseidon, along with one member of academia selected jointly by CCSE and Poseidon subject to approval by Commission Staff, will certify that each offset project meets the selection criteria and Poseidon may choose which projects to fund from an approved group of offset projects.

B. The Plan Will Be Administered by an Independent Third Party

Under the Plan, the CCSE will implement the Plan's offset program and review and validate the annual accounting of Poseidon's GHG emissions and reductions from carbon offsets/RECs. CCSE will ensure that the RFP process is accurate and conforms to the requirements of the Plan and other relevant protocols, and, along with other members of the Evaluation Committee, will be responsible for selecting which offset projects submitted in the RFP process qualify for purchase by Poseidon. CCSE will also prepare an Annual GHG

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market disruptions or instability; or (iv) the market price has escalated to a level that renders the purchase of offsets/RECs uneconomic to the Project, the Plan will require Poseidon to deposit money into an escrow account to be used to fund GHG offset projects as they become available, with Poseidon agreeing to contribute to the fund in an amount equal to $10.00 per metric ton for each ton Poseidon has not previously offset, adjusted for inflation from 2008.

Accounting Report which will, among other things, validate the GHG emission calculations for the Project each year, the credit or deficit in Poseidon's GHG offset bank, and the validity of offset projects relative to criteria set forth in the Plan.

C. The Plan Requires Oversight by the SDAPCD

The Plan provides that, subject to further review and approval by its governing board,[3] SDAPCD will review: (i) each Annual GHG Report that is prepared by CCSE for compliance with the requirements of the Plan, and (ii) any determination as to whether or not Poseidon has sufficiently offset its net indirect GHG emissions each year.

D. The Plan Requires the Expenditure of $1 Million Towards Reforestation of San Diego Areas Impacted by the 2007 Wildfires

At the request of the Commission, Poseidon has committed to invest the first $1 million expended on offset projects to reforest areas burned out by fires in the San Diego region in the fall of 2007, and this commitment is memorialized in the Plan. Prior to commencement of Project operations, Poseidon will be required to demonstrate to the Commission that it has entered into a Memorandum of Understanding ("MOU") with an organization or state or local agency such as, by way of example, CCSE or California State Parks to administer the reforestation program. The MOU will confirm Poseidon's $1.0 million commitment to reforestation, made fully payable over five years (i.e., $200,000 per year). The qualified entity that administers the reforestation program will be responsible for calculating its carbon sequestration offsets, and will do so based to the extent applicable on the urban forestry protocols currently being developed for CCAR.

E. The Plan Requires Energy Minimization Consistent with Coastal Act Policies

The Plan reflects numerous Project components designed to ensure that the Project will utilize only the minimum energy necessary, in compliance with Coastal Act Section 30253(4), which requires that new development "minimize energy consumption and vehicle miles traveled." These include increased energy efficiency measures, such as the state of the art "pressure exchanger" energy recovery technology that allows recovery and reuse of 33.9% of the energy associated with desalination's reverse osmosis process, as well as high efficiency and premium efficiency motors and variable frequency drives on the intake water pumps to improve their efficiency. The Project will implement as many Leadership in Energy and Environmental Design ("LEED") building design features as are reasonably practicable, and will install on-site solar power generation as one element of its green building design program if doing so meets a specific return on investment measure in the Plan. The Project will also implement carbon dioxide recovery designed to sequester carbon dioxide from Project product water to the extent it is reasonably available.

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[3] Poseidon has initiated discussions with SDAPCD and will provide further details regarding its specific role as they become available.

III. THE PLAN'S PROPOSAL TO OFFSET NET EMISSIONS FULLY COMPLIES WITH CALIFORNIA LAW AND MITIGATES IMPACTS

One of the key issues associated with the Commission's consideration of the Plan is whether the Project's GHG impact analysis may credit the GHG emissions reductions because the Project would result in less water being transported to the San Diego region from the State Water Project ("SWP"). The Water Districts will be required to show through annual accounting that the desalinated water they are purchasing from the Project will replace water that is pumped into the San Diego region from the SWP. Therefore, under CEQA principles, it is appropriate to net out carbon emissions associated with importation of the water that is being replaced. Staff contends, incorrectly, that Poseidon is not entitled to any emissions credits and should be responsible for GHG emissions from the replaced water because Poseidon cannot guarantee that it will not be imported to the San Diego region for another use. As discussed below, the Plan's approach of crediting avoided emissions is consistent with the methodology of analyzing impacts under CEQA and will mitigate any emissions-related impacts resulting from the Project's electricity usage.

A. The Plan Appropriately Credits Avoided Carbon Emissions from the 56,000 AFY That Will No Longer Be Imported to the San Diego Region

The Commission may appropriately consider avoided emissions in determining the Project's GHG baseline and evaluating its impacts. The principles of CEQA provide helpful guidance in this analysis. Under CEQA, an Environmental Impact Report ("EIR") must identify and focus on the "significant environmental effects" of a proposed project. Pub. Res. Code § 21100(b)(1). Significant impacts are defined as substantial or potentially substantial adverse changes in the environment. Pub. Res. Code §§ 21068, 21100(d); 14 Cal. Code Regs. § 15382. The "environment" for the purposes of CEQA analysis refers to the "the physical environmental conditions in the vicinity of the project" – normally as they exist when the notice of preparation for the EIR is published – and is referred to as the "baseline" against which the potential impacts of a proposed project are measured. 14 Cal. Code Regs. § 15125(a) ("This environmental setting will normally constitute the baseline physical conditions by which a Lead Agency determines whether an impact is significant.").

When the Project is built, it will result in an increase in energy use due to the electricity that will be purchased from SDG&E to operate the desalination facility, and a decrease in energy use because the Project's water will replace water that would otherwise have been imported from the SWP to the Project's customers. Under CEQA principles, the appropriate method of assessing the Project's emissions-related impact is to consider the ultimate change in GHG emissions against the existing baseline, factoring in both the increases and decreases in energy use that the Project will cause. *See* CEQA Guidelines § 15126.2(a) ("In assessing the impact of a proposed project on the environment, the Lead Agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is issued . . .").[4] Thus, if all indirect GHG emissions from the Project are

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[4] The State Office of Planning and Research's ("OPR") June 19, 2008 Technical Advisory on CEQA and Climate Change recommends that "[w]hen assessing a project's GHG emissions,

zeroed out by its avoided emissions and carbon offsets, the Project will not increase net GHG emissions relative to existing conditions and there will be no adverse impact. *Id.* Commission Staff maintains that this net approach is unwarranted and that the Project must account for GHG emissions associated with the importation of water even though that water will be replaced by the Project.

The Project will supply 56,000 acre-feet of water per year to the San Diego region. As stated by all Project water agency partners in letters to the State Lands Commission dated November 6 and 7, 2007, water from the Project will provide a direct, one-for-one replacement of water imported to the San Diego region from the SWP, thus eliminating the annual need to pump 56,000 acre-feet of water into the region and avoiding the associated carbon emissions. Because a reduction in demand for imported water is critical to Southern California's water supply reliability, the Metropolitan Water District of Southern California ("MWD") has committed to pay Poseidon's customers $250 for each acre-foot of water purchased from the Project, *so long as it offsets an equivalent amount of imported water and subject to an annual audit demonstrating that the desalinated water was used to offset a demand for imported water that otherwise would have been delivered by MWD.*[5] The MWD rebate and audit system contribute to the substantial evidence in the record establishing that the Project's water will in fact replace imported water.

It is speculative to predict whether some or all of the replaced water would still be imported to the San Diego region after implementation of the Project. However, even assuming the replaced water does continue to be imported into the region, the question before the Commission is whether it has the authority under California law to require Poseidon to mitigate the GHG emissions associated with those water imports for uses separate and entirely unrelated to the Project or whether the purchasers of that water should be responsible for mitigating those emissions.

Commission Staff has argued that Poseidon should not receive a carbon credit for the decrease in water deliveries because the Project does not guarantee, through measures such as retiring distant water rights or assigning water rights to instream uses, that an equivalent amount of water will not continue to be imported into the San Diego region for new or expected uses. But even if the replaced water is pumped into the region for other uses as speculated by Commission Staff, the associated carbon emissions from such pumping should be and is the responsibility of those other uses. Any other outcome would result in an unfair and unwarranted

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lead agencies must describe the existing environmental conditions or setting, without the project, which normally constitutes the baseline physical conditions for determining whether a project's impacts are significant." OPR is in the process of preparing specific guidance for use in determining thresholds of significance for GHG emissions impacts, in consultation with CARB, and new CEQA Guidelines regarding the analysis and mitigation of GHG emissions in CEQA documents are to be adopted on or before January 1, 2010.

[5] MWD's program is documented in a June 22, 2007 letter from the General Manager of the MWD to Peter Douglas, Executive Director of the Coastal Commission, as well as various contracts with relevant water agencies.

"double counting" of carbon emissions, requiring Poseidon to offset emissions caused by other activities not associated with its operations.

Under two landmark opinions issued by the United States Supreme Court – *Nollan v. California Coastal Commission* and *Dolan v. City of Tigard* – public agencies may not constitutionally impose conditions on development unless there is a "nexus" between the condition and the project's environmental impact and the condition is "roughly proportional" to the impact being addressed. These constitutional requirements are explicitly recognized in CEQA's implementing regulations.[6] In this case, there is no nexus for the Commission to require Poseidon to offset GHG emissions that may result at some uncertain point in the future should the water that Poseidon is replacing be imported for some unrelated use. Requiring Poseidon to address impacts from water importation unrelated to its Project plainly does not satisfy the nexus test. Nor could such a requirement meet the "rough proportionality" standard, since no factual findings have been made demonstrating what portion of the replaced water, if any, would still be imported to the San Diego region or the quantity of GHG emissions that would be associated with any such importation. *Ehrlich v. City of Culver City*, 12 Cal. 4th 854, 876 (1996) (local permit authority must "demonstrate a *factually* sustainable proportionality between the effects of a proposed land use and a given exaction" to show "rough proportionality") (original emphasis). For these reasons, requiring Poseidon to offset GHG emissions caused by the importation of water that this Project is replacing would violate constitutional norms and exceed the Commission's authority.

And under CEQA, if the 56,000 acre-feet per year of water replaced by the Project does ultimately end up being imported to the region for some other hypothetical use after the Project commences, the GHG emissions and any other environmental impacts associated with that other use will be separately evaluated and mitigated (as necessary) under CEQA and other applicable environmental laws. This fundamental proposition was affirmed in *Environmental Council of Sacramento v City of Sacramento,* 142 Cal. App. 4th 1018 (2006), where the court rejected plaintiffs' claims that a Conservation Plan's baseline assumption that 15,000 acres would remain agricultural was "unfunded, voluntary and unenforceable" in violation of CEQA, and held that even if a variety of prerequisite steps were ultimately taken to develop the agricultural land, the project proponents "would remain subject to another CEQA review and be required to evaluate the effects of the proposed additional development on the effectiveness of the Conservation Plan." *Environmental Council*, 142 Cal. App. 4th at 1036. The court further ruled that the baseline assumptions regarding the environmental benefits of the project were properly considered in the environmental analysis because they were supported by substantial evidence and that the lead agency appropriately did not speculate about the impacts that could result from the project should those reasonable assumptions not be realized. *Id.* at 1035-37.

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[6] CEQA Guidelines § 15126.4(a)(4)(A), (B) ("There must be an essential nexus (i.e. connection) between the mitigation measure and a legitimate government interest. Nollan v. California Coastal Commission, 483 U.S. 825 (1987); and the mitigation measure must be 'roughly proportional' to the impacts of the project. Dolan v. City of Tigard, 512 U.S. 374 (1994)").

Contrary to Staff's position, CEQA does not require a project proponent to guarantee that a project's preservation of a nonrenewable resource will not be undone by the consumption of that resource by another project. Nor is any such "guarantee" required under CEQA when a lead agency makes significance conclusions regarding environmental impacts. "A public agency can make reasonable assumptions based on substantial evidence about future conditions without guaranteeing that those assumptions will remain true." *Environmental Council*, 142 Cal. App. 4th at 1036. "CEQA only requires that an EIR discuss 'the significant environmental effects of *the proposed project*" including in the analysis consideration of the environmental benefits that will be achieved from key project components. *Village of Laguna of Laguna Beach, Inc. v. Board of Supervisors*, 134 Cal. App. 3d 1022, 1030 (1982) (original emphasis) (citing Pub. Res. Code § 21100(a)). In *Village of Laguna*, the court upheld an EIR's environmental impact analysis that was predicated on reasonable assumptions regarding benefits from "integral portions of the proposed project" such as a transportation corridor, preservation of a Greenbelt, and 25% affordable housing commitments. *Id.* at 1029-30. The court drew a parallel between its holding that an EIR is not required to evaluate the environmental consequences that would occur if a project's key assumptions prove to be erroneous, and other opinions in the cumulative impacts context holding that lead agencies are not required to evaluate related project actions unless they are imminent. *Id.* at 1030-31; *see also Banker's Hill, Hillcrest, Park West Community Preservation Group v. City of San Diego*, 139 Cal. App. 4th 249, 275 (2006) (city properly considered project design features in determining that a project would not have a significant traffic safety impact). Based on the foregoing precedent, the Commission may rely on the Project's avoidance of GHG emissions associated with replaced water when assessing the Project's impact on GHG emissions.

Staff's position, if accepted, would be contrary to constitutional precepts and CEQA principles and would result in bad policy results. *For example, under Staff's view, a water supply analysis in an EIR could not rely on a project's commitment to employ water conservation features, such as low flush toilets and reclaimed water, to reach a conclusion that the project would have a less than significant impact on water supply. Instead, Staff would require the EIR to demonstrate that the foregone water resulting from these conservation measures would not be used by some other hypothetical project. Similarly, Staff's view would prevent a utility company that replaced 50% of its existing power purchased from coal-fired power plants with power from a large solar PV project from taking credit for this substantial investment in solar power (which reduced its carbon footprint by 50%), just because the coal-fired power could subsequently be sold to another customer.* It would not be reasonable or fair in this situation to continue to hold the first company responsible for the coal-fired emissions after they were being used by a different company. Staff's position is untenable and would frustrate resource conservation efforts and CEQA's scheme of project-specific environmental review and mitigation of impacts.

B. The Plan's "Carbon Neutral" Approach is Consistent With AB 32

The value of a "carbon neutral" approach like Poseidon's that is based on voluntary offsets has been recognized by CARB in its just-released Draft Scoping Plan for Implementation of Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006, which states in relevant part:

> A number of major companies have also established 'carbon neutral' policies, under which they seek to minimize their GHG emissions to the extent possible, and buy voluntary offsets. ARB believes voluntary effort to reduce GHG emissions will play an important role in meeting the State's overall GHG goal. ARB encourages all Californians to take voluntary action to reduce their carbon emissions, and recognizes the importance that this type of voluntary action can have in creating support for and momentum toward GHG emission reductions.

Draft Scoping Plan, at page 45. Although Poseidon's Plan is voluntary, it still complies with AB 32's requirements for "compliance" (as opposed to voluntary) offset programs, which mandate that that such programs be real, additional, verifiable, enforceable and permanent, as detailed above.

C. The Plan's Offset Requirements Are Voluntary, and AB 32 Does Not Regulate Indirect Emitters Such as the Project

The Commission's authority under the Coastal Act to impose GHG emissions standards or emissions-related mitigation is limited to assuring compliance with CARB and air pollution control district requirements. Cal. Pub. Res. Code § 30414(a). AB 32 establishes a new air pollution control program that clearly places with CARB the authority to regulate and control GHG emissions, and to protect coastal resources from GHG emissions-related impacts. Cal. Health & Safety Code §§ 38501(a), 38510. CARB has the option of recommending ways in which the Commission could complement or assist in the implementation of air quality programs, but CARB has not requested the Commission's assistance or promulgated emissions standards with which the Project must comply. Since no CARB or SDAPCD requirements related to GHG emissions are applicable to the Project, the Commission's authority is limited to imposing regulations on the Project to minimize energy usage for the site. Therefore, the portion of the Plan that requires Poseidon to offset indirect net carbon impacts is a voluntary commitment that Poseidon proposes to make enforceable through Special Condition 10, and represents a precedent-setting commitment that is consistent with CEQA principles.[7]

And it is unlikely that AB 32 will apply to the Project, since the Project will only emit significant GHGs indirectly through electricity usage. Instead, it is anticipated that AB 32 will apply to direct emitters such as SDG&E, the source of the Project's electricity. To the extent regulations promulgated under AB 32 ultimately become applicable to the Project, Poseidon will modify the Plan to conform to those requirements. In any event, because AB 32 will apply to SDG&E's generation of electricity, the Project's net indirect GHG emissions will be reduced over time under AB 32 to the extent that it brings about a reduction in SDG&E's carbon emissions.

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[7] Therefore, Poseidon believes that the Commission does not have authority to require a Plan that imposes offset requirements beyond Poseidon's voluntary commitment.

D. The Plan's Use of CCAR-Certified Baseline Protocols is Appropriate

Prior to the November 15, 2007 hearing on the Permit, Commission Staff expressed disagreement with the emission factor used to estimate the Project's net indirect GHG emissions. However, since Poseidon intends to buy all of its energy from SDG&E system power, Poseidon maintains that the appropriate emission rate is SDG&E's annual emission factor for delivered electricity, as stated in SDG&E's California Climate Action Registry ("CCAR") Annual Emissions Report, which CCAR certified. CCAR is the only state agency that is authorized by the California State Legislature to establish protocols for carbon emissions baselines, and the source of the derivation comes from SDG&E's credible self-reported Annual Entity Emissions report. CARB, the SCAQMD and SDAPCD have concurred that the CCAR emission factor is the appropriate methodology to be used for the Plan. Based on SDG&E's most recent submittal to CCAR, the current emission rate should be 780.79 pounds of carbon dioxide emissions per megawatt-hour. We understand that both Commission Staff and State Lands Commission staff concur that the Plan appropriately uses the CCAR certified protocols.

Finally, in response to the Commission's request at its June meeting, we understand that Commission Staff intends to agendize the Plan for the Commission's August 2008 meeting. If our understanding is incorrect, then this letter hereby serves as Poseidon's request that any issues Staff believes should prevent consideration of the Plan in August be brought to hearing before the Commission at the August meeting pursuant to the dispute resolution provisions of sections 13056(d) and 13166 of the Coastal Act's implementing regulations. 14 Cal. Code Regs. §§ 13056(d), 13166.

We appreciate the Commission's consideration of the foregoing issues and respectfully request that the Commission approve the attached Energy Minimization and Greenhouse Gas Reduction Plan at its August meeting.

Sincerely,

Peter M. MacLaggan

Enclosure

cc: Tom Luster
Rick Zbur, Esq.

MEMO TO FILE
Sara Townsend
July 24, 2008

Plan Modifications Agreed to By Poseidon and Commission Staff

1. Annual Review Process

Poseidon will produce an annual report each year and will submit it to Commission staff for review and approval. This report will describe and account for Poseidon's annual and cumulative balance of verified GHG emission reductions. Poseidon shall submit its first annual report for Commission staff review and approval before starting the desalination facility's operations. All subsequent reports will cover one calendar year.

2. Page 11, last sentence of first full paragraph:

"The total actual energy reduction ~~that would~~ resulting from the use of state-of-the-art desalination and energy recovery technologies and design will be verified by direct readings of the total electricity ~~energy~~ consumed by the desalination plant at the Project's substation(s) electric meter(s) and documented as soon as the Project is fully operational."

3. Page 12, first full sentence:

~~"The actual savings will be determined during the final building design process.~~ The total actual energy reduction resulting from the use of the green building design will be verified by direct readings of the total electricity consumed by the desalination plant at the Project's substation(s) electric meter(s) and documented as soon as the Project is fully operational."

4. Page 12, second full paragraph:

"If Poseidon proceeds with an onsite PV system, the total actual energy reductions resulting from the use of the on-site solar power generation will be verified by direct readings of the total electricity ~~produced by the solar panels at the system's electric meter~~ consumed by the desalination plant at the Project's substation(s) electric meter(s) and documented once the system is fully operational."

5. **Page 18, Table 4**

For the row entitled "Sequestration in Coastal Wetlands", change column three from "18 to 304 metric tons CO_2/ year" to "18 to 188 metric tons CO_2/ year".

6. **Page 27, Sequestration through Reforestation**

Poseidon will commit to using either the CARB/CCAR Forest Project Protocols or the upcoming CARB/CCAR Urban Forest Project Protocol depending on the type of project Poseidon selects.

7. **Poseidon's calculations of GHG emissions** throughout the Plan are based on a conversion rate of 2205 pounds per metric ton. Commission staff used the more precise conversion rate of 2204.6 pounds/ metric ton so the calculations are slightly different. Going forward, Poseidon will use a conversion rate of 2204.6 pounds per metric ton.

CARLSBAD SEAWATER DESALINATION PROJECT

ENERGY MINIMIZATION
AND
GREENHOUSE GAS REDUCTION PLAN

JULY 3, 2008

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CARLSBAD SEAWATER DESALINATION PROJECT

ENERGY MINIMIZATION AND GREENHOUSE GAS REDUCTION PLAN

JULY 3, 2008

INTRODUCTION

In October 2007, Poseidon Resources (Poseidon) made public its voluntary commitment to account for and bring to zero the net indirect Greenhouse Gas (GHG) emissions from the Carlsbad Desalination Project (Project). Poseidon followed its unprecedented commitment with the development of a Climate Action Plan (CAP), Poseidon's roadmap to achieving its commitment over the 30-year life of the Project. Based on protocols adopted by the California Climate Action Registry (CCAR), the CAP was reviewed by the California Coastal Commission (CCC), the California State Lands Commission (CSLC), the California Air Resources Board (CARB) and, at the request of a Coastal Commissioner, the South Coast Air Quality Management District (SCAQMD).

On November 15, 2007, the CCC approved the Project subject to the condition, among others, that the CCC approve the CAP at a subsequent hearing. Specifically, Special Condition 10 states that "prior to issuance of the permit, the Permittee shall submit to the Commission a Revised Energy Minimization and Greenhouse Gas Reduction Plan that addresses comments submitted by the staffs of the Coastal Commission, State Lands Commission and the California Air Resources Board. The permit shall not be issued until the Commission has approved a Revised Energy Minimization and Greenhouse Gas Reduction Plan after a public hearing." Since the Special Condition was adopted, Poseidon has reviewed comments from the November 15 hearing as well as CCC staff's draft findings, and continued to work with the CCC, CSLC and CARB to refine the CAP and ensure a complete understanding of the process it sets forth to meet Poseidon's commitments. Poseidon's November 20, 2007 draft of the CAP reflected changes made in response to helpful comments from these agencies and is attached to this document as Appendix A. Poseidon's written responses to numerous questions and comments from the CCC and CSLC about the CAP are attached as Appendix B. More recently, CCC staff issued to Poseidon additional comments and a draft "Greenhouse Gas Emissions Template" (the Draft CCC Template), and instructed Poseidon to revise its CAP in accordance with the template. CCC staff also requested that Poseidon rename the CAP with a new title, the Project's Energy Minimization and Greenhouse Reduction Plan (the Plan). The Draft CCC Template and the most recent comments and Poseidon responses are attached as Appendix C.

On May 2, 2008, Poseidon met with representatives of the CCC, CSLC and various agencies in the San Diego region to further discuss details of the Plan and its implementation. The purpose of this document is to present Poseidon's revised Plan in response to the additional comments received, the May 2 meeting, and the draft CCC Template.

1. Project Overview.

The 50 million gallon per day (MGD) Project (Figure 1) is co-located with the Encina generation station, which currently uses seawater for once-through cooling. The Project is developed as a public-private partnership between Poseidon and nine local utilities and municipalities.

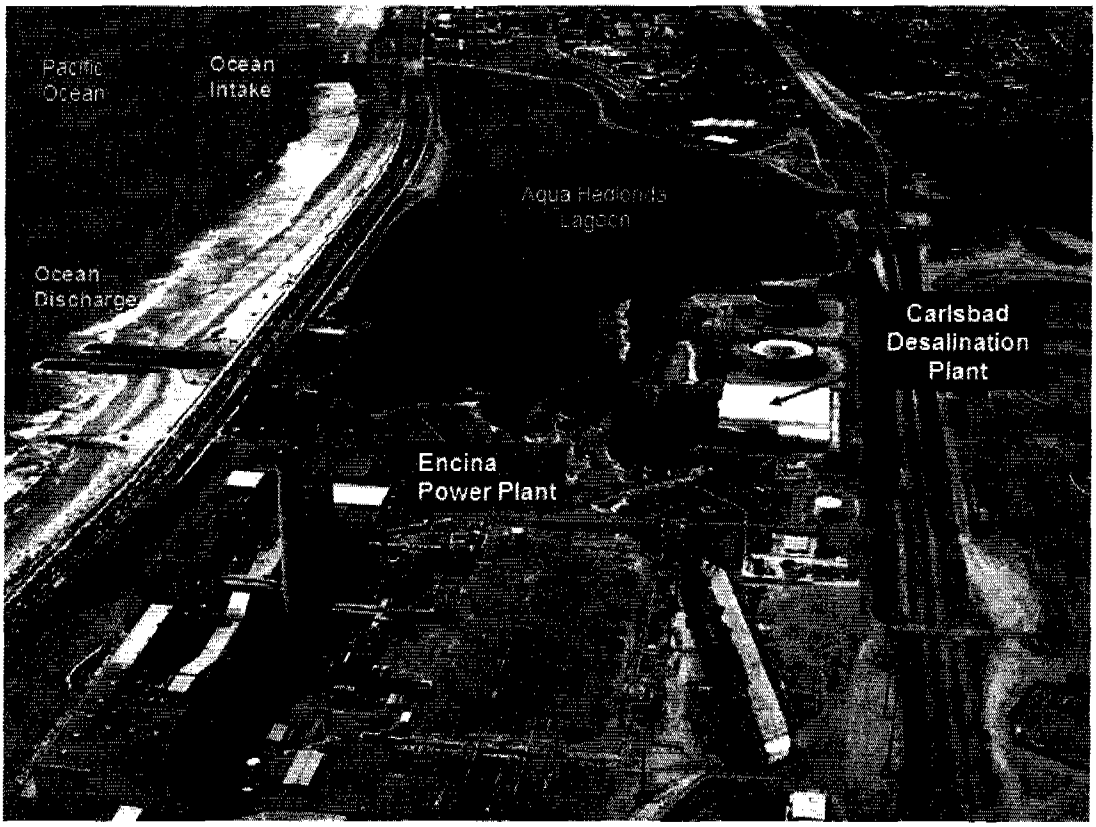

Figure 1 - Carlsbad Seawater Desalination Project

In 2006, California legislation introduced the AB 32 Global Warming Solutions Act that aims to reduce the GHG emissions of the state to 1990 levels by year 2020. While it is unlikely that the legislation or its implementing regulations will apply to the Project because the Project only emits significant GHGs indirectly through electricity use,[1] Poseidon applauds the objectives of

[1] AB 32's implementing regulations are currently being drafted and will subsequently be released for public comment. AB 32's regulations, when promulgated, will likely target direct emitters of GHGs, including SDG&E (the source of the Project's electricity), rather than indirect emitters such as the Project. In any case, Poseidon will modify its Plan to conform with these regulations to the extent that they are applicable to the Project.

AB 32 and is committed to helping California maintain its leadership role in addressing the causes of Climate Change. As a result, Poseidon has committed to offset the net indirect GHG emissions associated with the Project's operations. Poseidon's voluntary commitment has been incorporated into the Project's permit through Special Condition 10, adopted by the California Coastal Commission and agreed to by Poseidon. According to Special Condition 10 and CCC staff direction, Poseidon is required to submit a plan for Commission review and approval showing how the Project will minimize its electricity use and reduce indirect GHG emissions resulting from net increases in electricity use over existing conditions.

2. CCC Draft Emissions Template.

The draft CCC Template establishes "a protocol for how to assess, reduce, and mitigate the GHG emissions of applicants," and calls for the organization of relevant information into the following three sections:

1. Identification of the amount of GHGs emitted from the Project,
2. On-Site and Project related measures planned to reduce emissions, and
3. Off-site mitigation options to offset remaining emissions.

After a brief explanation of Poseidon's overall strategy for eliminating the Project's net indirect GHG emissions, this document then organizes the Plan into the CCC's three general categories.

3. Overview of the Project's GHG Reduction Strategy.

Since offsetting net indirect GHG emissions is an ongoing process dependent on dynamic information, Poseidon's plan for the assessment, reduction and mitigation of GHG emissions establishes a protocol for identifying, securing, monitoring and updating measures to eliminate the Project's net carbon footprint. Once the Project is operational and all measures to reduce energy use at the site have been taken, the protocol involves the following steps, completed each year:

1. Determine the energy consumed by the Project for the previous year using substation(s) electric meter(s) readings from San Diego Gas & Electric's (SDG&E) or any other entity from which the Project obtains all or part of its electricity at any time in the future.

2. Determine SDG&E emission factor for delivered electricity from its most recently published CCAR Annual Emissions Report. Reports are issued annually and are accessible on the CCAR's website. Emission factors will be obtained from CARB if and when SDG&E's certified emission factor for delivered electricity is publicly available through CARB's anticipated GHG Inventory program. If at any time in the future the Project obtains all or part of its electricity from an entity other than SDG&E, the appropriate CCAR emission factor for that entity shall be used. While current emissions reports only report CO_2, future reports are expected to include the five additional GHGs (methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride). To the extent that these additional GHGs are included in future reports, they will be converted to carbon equivalence for the Project and offset under the Plan.

3. Calculate the Project's gross indirect GHG emissions resulting from Project operations by multiplying its electricity use by the emission factor.

4. Calculate the Project's net indirect GHG emissions by subtracting emissions avoided as a result of the Project (Avoided Emissions) and any existing offset projects and/or Renewable Energy Credits (RECs).

5. If necessary, purchase carbon offsets or RECs to zero-out the Project's net indirect GHG emissions; provided, however, that if through the process set forth in Part III of this Plan, it is determined that (i) such offsets or RECs are not reasonably available; (ii) the "market price" for such offsets is not reasonably discernable; (iii) the market for offsets/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, Poseidon shall pay a fee into an escrow fund, with prior notice to the CCC and third party oversight, for the purpose of funding GHG offset projects as they become available.

Energy efficiency measures and on-site use of renewable resources will be given the highest priority. In addition, through its annual program to offset net carbon emissions for that year, Poseidon will commit the first $1 million spent on this program to fund the revegetation of areas in the San Diego region impacted by wildfires that occurred in the fall of 2007, as discussed in detail in Part III below.[2]

The following are elements of the Plan organized in accordance with the draft CCC template.

PART I. IDENTIFICATION OF THE AMOUNT OF GHG EMITTED

The Project will produce fresh drinking water using reverse osmosis membrane separation. The treatment processes used at the Plant do not generate GHGs. The desalination process does not involve heating and vaporization of the source seawater and thus does not create emissions of water vapor, carbon dioxide, methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), or sulfur hexafluoride (SF_6). Reverse osmosis membranes do not reject the carbon dioxide, which is naturally dissolved in the source seawater, and this carbon dioxide is retained in dissolved form in the fresh drinking water created by desalination.

The modest number of fleet vehicles used by plant personnel will create a small amount of GHG emissions, but since these emissions make up less than 5% of the Project's carbon footprint, these emissions are considered *de minimis* and are not required to be reported (CCAR General Reporting Protocol of March 2007 (Chapter 5)). The Project will not store or use fossil fuels on site, and will not self-generate electricity that emits GHGs. As a result, Project operations will not create significant direct sources of GHG emissions. There are no direct fugitive emissions from the plant.

[2] The California Coastal Commission conditioned the Project's Coastal Development Permit on Poseidon committing the first $1 million spent on this program to the revegetation of areas impacted by wildfires in the San Diego region.

The Project's sole significant source of GHG emissions will be indirect emissions resulting from purchased electricity. All of the electricity supply for the desalination plant operations will be provided by SDG&E. Therefore, the complete accounting of significant GHG emissions for the Project will consist entirely of indirect emissions resulting from electricity purchased from SDG&E.[3]

Currently, about 65% of the electricity supplied by SDG&E is generated from fossil fuels[4]. As a result, until SDG&E switches to 100% "green" power supply sources, the Project operations will be indirectly linked to the generation of GHGs.

The total net indirect GHG emissions of the Project from the stationary combustion of fossil fuels to generate electricity is dependent on three key factors: (1) how much electricity is used by the Project; (2) sources of energy (fossil fuels, wind, sunlight, etc.) used to generate the electricity supplied to the plant, and (3) the Avoided Emissions, i.e., the amount of energy saved or emissions avoided as a direct result of the Project's operations. These factors will vary over time.

A. Electricity Use by the Project.

The Project will operate continuously, 24 hours a day for 365 days per year, to produce an average annual drinking water flow of 50 million gallons per day (MGD). The total baseline power use for this plant is projected to be 31.3 average megawatts (aMW), or 4.9 MWh per acre-foot (AF) of drinking water. The power use incorporates both production of fresh drinking water, as well as conveyance and delivery of the water to the distribution systems of the public water agencies that have contracted to purchase water from the Project. The total annual electricity consumption for the Project Baseline Design is 274,400 MWh/yr.

B. SDG&E's Emission Factor.

The Project will purchase all of its electricity from SDG&E.[5] Accordingly, the appropriate emission factor to use for the Project's indirect GHG emissions from its electricity use is SDG&E's independently verified and published emission factor for the electricity purchased and consumed during the previous year. The certified emission factor for delivered electricity in 2006 is set forth in the utility's Annual Emissions Report published by CCAR in April 2008. In the published Emissions Report, the current certified emission factor for SDG&E's 2006 delivered electricity is 780.79 lbs of CO_2 per delivered MWH of electricity.

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[3] Typically, GHG emissions from construction of a project are not included in the on-going reporting of GHGs from operations. In fact, GHGs from construction are not typically accounted for in a GHG inventory at all.

[4] SDG&E Power Content Label, September 2007

[5] If at any time in the future the Project obtains all or part of its electricity from an entity other than SDG&E, the appropriate CCAR emission factor for that entity shall be used.

Circumstances will change over the life of the Project. SDG&E's emission factors are updated annually and the amount of energy consumed by the Project may change.[6] As a result, it will be necessary to recalculate the net indirect GHG emissions of the Project on an annual basis using the actual SDG&E emission factor reported to the CCAR (or CARB). Until the mandatory reporting of emission factors under AB 32 is available, the emission factors for SDG&E registered with CCAR are the best available for purposes of planning and permitting this Project.

Statewide initiatives to expand the use of renewable sources of electricity are expected to decrease the emission factors of all California power suppliers in the future. For example, approximately 6% of SDG&E's retail electricity is currently generated from renewable resources (solar, wind, geothermal, and biomass).[7] In their most-recent Long-term Energy Resource Plan, SDG&E has committed to increase energy from renewable sources by 1% each year, reaching 20% by year 2017. These and other reductions are expected to further reduce the Project's net indirect GHG emissions over time.

Table 1 summarizes the Project's estimated gross indirect CO_2 emissions from purchased electricity for Project operations, based on the most current information.

Table 1 - Identification of Gross Indirect CO_2 Emissions from Purchased Electricity for Project Operations

Source	Total Annual Power Use (MWh/ year)	Total Annual Emissions (metric tons CO_2/ year)
Project Baseline Design	274,400	97,165

PART II: ON-SITE AND PROJECT-RELATED REDUCTION OF GHG EMISSIONS

To determine the Project's indirect GHG emissions, on-site and project-related reductions in emissions must also be considered. These are carbon emission reductions that result from measures that reduce energy requirements (increased energy efficiency, potential onsite solar, recovery of CO_2 and green building design), as well as Project-related emissions that will be avoided (Avoided Emissions) as a direct result of the Project and its various components (coastal wetlands restoration, reduced energy use from water reclamation, and replacing Customers' SWP water with water from the Project).

[6] SDG&E Annual Emissions Reports to CCAR have changed each year. For years 2004, 2005 and 2006 the emissions factors have been 614, 546 and 781 lbs of CO_2/MWh, respectively.
[7] SDG&E Power Content Label, September 2007.

A. Increased Energy Efficiency.

Poseidon has committed to implement certain measures to reduce the Project's energy requirements and GHG emissions, and will continuously explore new technologies and processes to further reduce and offset the carbon footprint of the Project, such as the use of carbon dioxide from the ambient air for water treatment. These measures are set forth below.

The Project's high-energy efficiency design incorporates state-of-the-art features minimizing plant energy consumption. One such feature is the use of a state-of-the art pressure exchanger-based energy recovery system that allows recovery and reuse of 33.9% of the energy associated with the reverse osmosis (RO) process. A significant portion of the energy applied in the RO process is retained in the concentrated stream. This energy bearing stream (shown with red arrows on Figure 2) is applied to the back side of pistons of cylindrical isobaric chambers, also known as "pressure exchangers" (shown as yellow cylinders on Figure 2). These energy exchangers recover and reuse approximately 45% of the energy used by the RO process.[8]

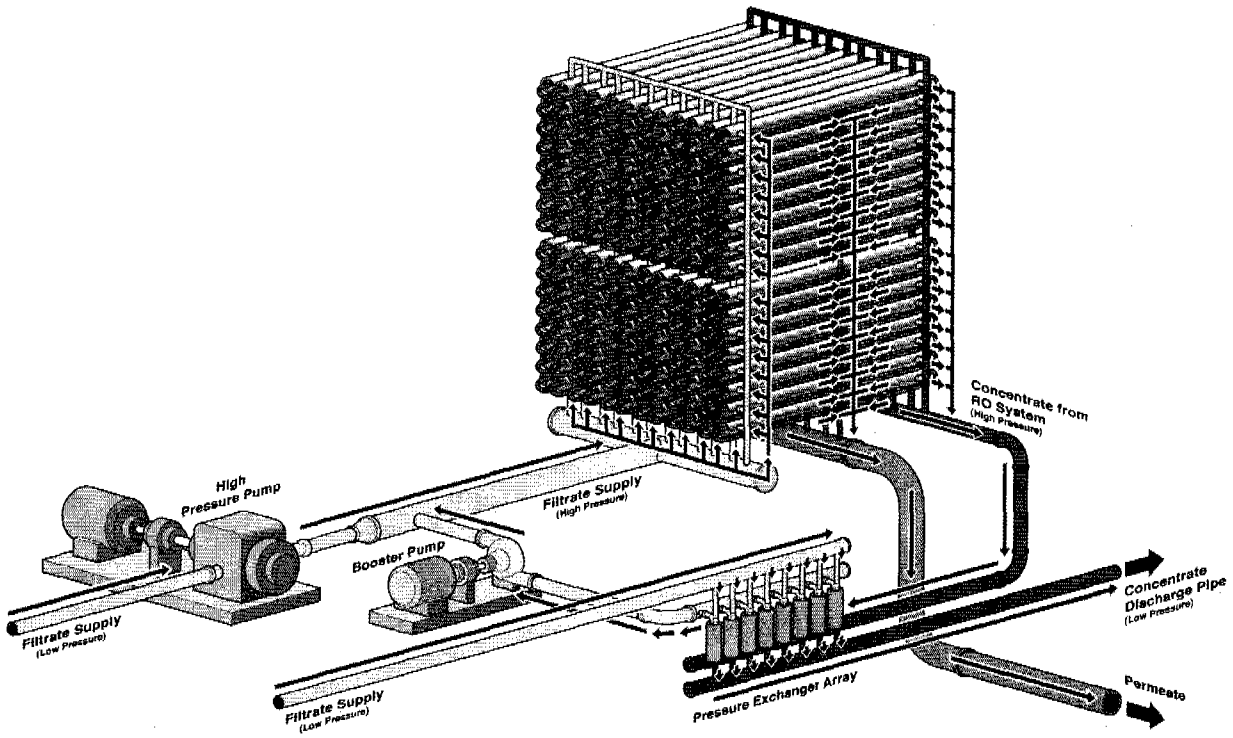

Figure 2 - Energy Recovery System for the Carlsbad Seawater Desalination Plant

[8] The "45 % percent energy recovery and reuse" refers to the gross energy recovery potential, while the "33.9 % energy recovery and reuse" refers to the actual energy savings associated with the energy recovery system. The difference between gross and actual energy savings is due to mechanical inefficiencies of the recovery system and associated friction losses. Thus, for purposes of calculating the overall energy savings, Table 2 correctly reflects 33.9% savings associated with the pressure exchanger.

Currently there are no full-scale seawater desalination plants in the US using the proposed state-of-the art pressure exchanger energy recovery technology included in the "High Efficiency Design" (Table 2). All existing seawater desalination projects in the US, including the 25 MGD Tampa Bay seawater desalination plant, which began commercial operation on January 25, 2008, are using standard energy recovery equipment – i.e., Pelton wheels (see Figure 2). Therefore, the Pelton wheel energy recovery system is included in the "Baseline Design" in Table 2.

The pressure exchanger technology that Poseidon proposes to use for the Project is a national technology. The manufacturer of the pressure exchangers referenced in Table 2 of the Project Power Budget is Energy Recovery, Inc., a US company located in San Leandro, California (www.energyrecovery.com).

A pilot-scale seawater desalination plant using the pressure exchanger technology proposed by Poseidon and supplied by Energy Recovery, Inc. has been in operation at the US Navy's Seawater Desalination Testing Facility in Port Hueneme, California since 2005. The overall capacity of this desalination plant is 50,000 to 80,000 gallons per day. The pilot testing work at this facility has been conducted by the Affordable Desalination Collaboration (ADC), which is a California non-profit organization composed of a group of leading companies and agencies in the desalination industry (www.affordabledesal.com). A portion of the funding for the operation of this facility is provided by the California Department of Water Resources (DWR) through the state's Proposition 50 Program. The DWR provides independent oversight of this project and reviews project results. In addition, representatives of the California Energy Commission and the California Department of Public Health are on the Board of Directors of the ADC.

The proposed pressure exchanger technology (i.e., the same pressure exchanger employed at the ADC seawater desalination plant) was independently tested at Poseidon's Carlsbad seawater desalination demonstration plant. More than one year of testing has confirmed the validity of the conclusions of the ADC for the site-specific conditions of the Project. The test results from the Carlsbad seawater desalination demonstration plant were used to calculate the energy efficiency of the pressure exchangers included in Table 2. Poseidon's technology evaluation work at the Carlsbad seawater desalination demonstration plant was independently reviewed and recognized by the American Academy of Environmental Engineers and by the International Water Association, who awarded Poseidon their 2006 Grand Prize in the field of Applied Research.

Table 2 - Comparison of Baseline and High-Efficiency Power Budget for 50 MGD Water Production Capacity

CARLSBAD DESALINATION PROJECT
COMPARISON OF BASELINE AND HIGH-EFFICENCY POWER BUDGET
FOR 50 MGD WATER PRODUCTION CAPACITY

Unit	Baseline Design - Power Use			High Efficency Design - Power Use			Additional Costs for High Efficiency Equipment
Key Treatment Process Pumps	(Hp)	Equipment Efficiency	Equipment Type	(Hp)	Equipment Efficiency	Equipment Type	(US$2008)
Power Plant Intake Pumps (Stand-Alone Operation)	3,750	70%	Standard Motors - No VFDs	3,750	70%	Standard Motors - No VFDs	None
Seawater Intake Pumps	2,100	70%	Standard Motors - No VFDs	1,838	80%	High Eff. Motors - VFDs	US$0.7 MM
Reverse Osmosis Pumps	30,100	82%	High Eff. Motors - No VFDs	30,100	82%	High Eff. Motors - No VFDs	None
Energy Recovery System - Power Reduction	(7,550)	-25.1%	Pelton Wheels	(10,200)	-33.9%	Pressure Exchangers	US$5.0 MM
Product Water Transfer Pumps	10,680	70%	Standard Motors - No VFDs	9,350	80%	High Eff Motors & VFDs	US$3.4 MM
Pretreatment Filter Service Equipment							
Microscreen Pumps	150	65%	Standard Motors - No VFDs	150	65%	Standard Motors - No VFDs	None
Ultrafiltration Vacuum Pumps	780	70%	Standard Motors - No VFDs	680	80%	High Eff Motors - with VFDs	US$0.3 MM
Filter Backwash Blowers	400	70%	Standard Motors - No VFDs	400	70%	Standard Motors - No VFDs	None
Backwash Pumps	160	70%	Standard Motors - No VFDs	160	70%	Standard Motors - No VFDs	None
Backwash Equalization Basin Blowers	80	70%	Standard Motors - No VFDs	80	70%	Standard Motors - No VFDs	None
UF and RO Membrane Cleaning Systems							
Membrane Cleaning Pumps	30	70%	Standard Motors - No VFDs	30	70%	Standard Motors - No VFDs	None
Scavenger Tank Mixing System	50	70%	Standard Motors - No VFDs	50	70%	Standard Motors - No VFDs	None
Flush Pumps	150	70%	Standard Motors - No VFDs	150	70%	Standard Motors - No VFDs	None
Cleaning Chemicals System	15	70%	Standard Motors - No VFDs	15	70%	Standard Motors - No VFDs	None
Sewer System Transfer Pumps	15	65%	Standard Motors - No VFDs	15	65%	Standard Motors - No VFDs	None
Chemical Feed Equipment							
Polymer Feed System	15	65%	Standard Motors - No VFDs	15	65%	Standard Motors - No VFDs	None
Ammonia Feed System	30	65%	Standard Motors - No VFDs	30	65%	Standard Motors - No VFDs	None
Lime Feed System	200	65%	Standard Motors - No VFDs	200	65%	Standard Motors - No VFDs	None
Carbon Dioxide Feed System	30	65%	Standard Motors - No VFDs	30	65%	Standard Motors - No VFDs	None
Sodium Hypochlorite Feed System	40	65%	Standard Motors - No VFDs	40	65%	Standard Motors - No VFDs	None
Other Chemical Feed Systems	10	65%	Standard Motors - No VFDs	10	65%	Standard Motors - No VFDs	None
Service Facilities							
HVAC	250	NA	Standard Equipment	250	NA	Standard Equipment	None
Lightning	120	NA	Standard Equipment	120	NA	Standard Equipment	None
Controls and Automation	40	NA	Standard Equipment	40	NA	Standard Equipment	None
Air Compressors	100	NA	Standard Equipment	100	NA	Standard Equipment	None
Other Miscellaneous Power Uses	250	NA	Standard Equipment	250	NA	Standard Equipment	None
TOTAL DESALINATION PLANT POWER USE	**41,995**			**37,653**			
	31.32	**MW**		**28.08**	**MW**		

Figure 3 - Tampa Bay Desalination Plant Pelton Wheel Energy Recovery System

Table 2 presents a detailed breakdown of the projected power use of the Project under a Baseline Design and High-Energy Efficiency Design. As indicated in this table, the Baseline Design includes high efficiency motors for all pumps, except the largest reverse osmosis feed pumps, and a Pelton wheel energy recovery system which is the most widely used "standard' energy recovery system today. The total desalination power use under the Baseline Design is 31.3 aMW, which corresponds to a unit power use of 15.02 kWh/kgal[9] (4,898 kWh/AF)[10].

In addition to the state of the art-pressure exchanger system described above, the High-Energy Efficiency Design incorporates premium efficiency motors and variable frequency drives (VFDs) on desalination plant pumps that have motors of 500 horsepower or more. The total desalination plant energy use under the High-Energy Efficiency Design is a28.1 MW, which corresponds to unit power use of 13.488 kWh/kgal[11] (4,397kWh/AF)[12].

The main energy savings result from the use of pressure exchangers instead of Pelton wheels for energy recovery. The pressure exchangers are projected to yield 2,650 hp (2.0 aMW)[13] of power savings, which is 6.3 % reduction of the total power use of 31.3 aMW. Converted into unit power savings, the energy reduction of 2.0 aMW corresponds to 0.95 kWh/kgal[14] (310

[9] 31.3 MWh x 1,000 kW/MW/Average Fresh Water Production Rate of 2083 kg/h.
[10] 15.02 kWh/kgal x 326 kgal/AF.
[11] 28.1 MWh x 1,000 kW/MW/2083 kgal/h.
[12] 13.488 KWh/kgal x 326 kgal/AF.
[13] 2650 HP x 0.746 kw/HP
[14] 2.0 x 1000 kw/MW/2083kgal/HR

kWh/AF)[15]. The installation of premium-efficiency motors and VFDs on large pumps would result in additional 1.2 aMW (4%) of power savings.

The power savings of 0.95 kWh/kgal associated with the use of pressure exchangers instead of Pelton wheels for energy recovery are substantiated by information from several full-scale desalination plants which have recently replaced their existing Pelton wheel energy recovery systems with pressure exchangers in order to take advantage of the energy savings offered by this technology (see Appendix D). Appendix D contains energy data for a seawater desalination plant in Mazarron, Spain where a Pelton wheel system was replaced with PX pressure exchangers. As indicated on Table 2 of Attachment 1, the replacement resulted in energy reduction from 3.05 kWh/m^3 to 2.37 kWh/m^3 (i.e., 0.68 kWh/m^3 or 2.57 kWh/kgal). The total actual energy reduction that would result from the use of state-of-the-art desalination and energy recovery technologies and design will be verified by direct readings of the total electric energy consumed by the desalination plant at the Project's substation(s) electric meter(s) and documented as soon as the Project is fully operational.

B. <u>GHG Emission Reduction by Green Building Design</u>.

The Project will be located on a site currently occupied by an oil storage tank no longer used by the power plant. This tank and its content will be removed and the site will be reused to construct the Project. Because the facility is an industrial facility, LEED-level certification will not be feasible; but to the extent reasonably practicable, building design will follow the principles of the Leadership in Energy and Environmental Design (LEED) program. LEED is a program of the United States Green Building Council, developed to promote construction of sustainable buildings that reduce the overall impact of building construction and functions on the environment by: (1) sustainable site selection and development, including re-use of existing industrial infrastructure locations; (2) energy efficiency; (3) materials selection; (4) indoor environmental quality, and (5) water savings.

The potential energy savings associated with the implementation of the green building design as compared to that for a standard building design are in a range of 300 MWh/yr to 500 MWh/yr. The potential carbon footprint reduction associated with this design is between 106 and 177 tons of CO_2 per year. The energy savings associated with incorporating green building design features into the desalination plant structures (i.e., natural lighting, high performance fluorescent lamps, high-efficiency HVAC and compressors, etc.) are based on the assumption that such features will reduce the total energy consumption of the plant service facilities by 6 to 10 %. As indicated in Table 2, the plant service facilities (HVAC, lighting, controls and automation, air compressors and other miscellaneous power uses) are projected to have power use of 760 hp (250 hp + 120 hp + 40 hp + 100 hp + 250 hp = 760 hp) when standard equipment is used. The total annual energy demand for these facilities is calculated as follows; 760 hp x 0.746 kW/hp x 0.001 kW/MW x 24 hrs x 365 days = 4,967 MWh/yr. If use of green building design features result in 6 % of energy savings, the total annual power use reduction of the service facilities is calculated at 0.06 x 4,967 MWh/yr = 298.02 MWh/yr (rounded to 300 MWh/yr). Similarly, energy savings of 10 % due to green building type equipment would yield 0.1 x 4,967 MWh/yr =

[15] 0.95 kwh/kgal x 326 kgal/AF

496.7 MWh/yr (rounded to 500 MWh/yr) of savings. The actual savings will be determined during the final building design process.

C. On-Site Solar Power Generation.

Poseidon is exploring the installation of rooftop photovoltaic (PV) system for solar power generation as one element of its green building design. Brummitt Energy Associates of San Diego completed a feasibility study in March 2007 of a photovoltaic system at the Carlsbad Desalination Plant. (The solar feasibility study is attached as Appendix H) If the solar installation described by Brummitt is implemented, the main desalination plant building would accommodate solar panels on a roof surface of approximately 50,000 square feet, with the potential to generate approximately 777 MWh/yr of electricity. If installed, the electricity produced by the onsite PV system would be used by the Project and therefore would reduce the Project's electrical demand on SDG&E. The corresponding reduction of the Project's indirect emissions would be 275 tons of CO_2 per year. Poseidon is exploring other solar proposals and will update this information as it becomes available. Ultimately, the electricity and corresponding GHG savings of any on-site solar installation will be documented in the Project's annual electricity usage information. Poseidon will use commercially reasonable efforts to implement an on-site solar power project if it is reasonably expected to provide a return on the capital investment over the life of the Project.

If Poseidon proceeds with an onsite PV system, the total actual energy reductions will be verified by direct readings of the total electric energy produced by the solar panels at the system's electric meter and documented once the system is fully operational.

D. Recovery of CO_2.

Approximately 2,100 tons of CO_2 per year are planned to be used at the Project for post-treatment of the product water (permeate) produced by the reverse osmosis (RO) system. Carbon dioxide in a gaseous form will be added to the RO permeate in combination with calcium hydroxide or calcium carbonate in order to form soluble calcium bicarbonate which adds hardness and alkalinity to the drinking water for distribution system corrosion protection. In this post-treatment process of RO permeate stabilization, gaseous carbon dioxide is sequestered in soluble form as calcium bicarbonate. Because the pH of the drinking water distributed for potable use is in a range (8.3 to 8.5) at which CO_2 is in a soluble bicarbonate form, the carbon dioxide introduced in the RO permeate would remain permanently sequestered. During the treatment process the calcium carbonate (calcite – CaCO3) reacts with the carbon dioxide injected in the water and forms completely soluble calcium bicarbonate as follows:

$$CaCO_{3\,(solid)} + CO_{2\,(gas)} + H_2O_{\,(liquid)} \rightarrow Ca(HCO_3)_{2\,(liquid\ solution)}$$

At the typical pH range of drinking water (pH of 8.3 to 8.5) the carbon dioxide will remain in the drinking water in soluble form (see Figure 4) and the entire amount (100 %) of the injected carbon dioxide will be completely dissolved.

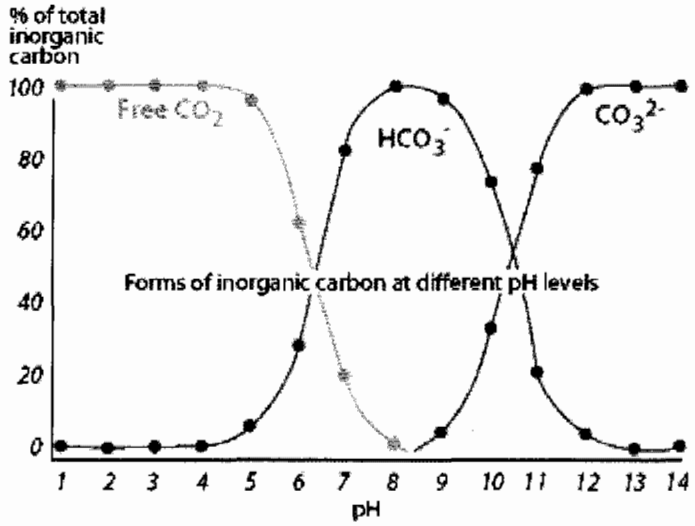

Figure 4 – Relationship between free carbon dioxide in gaseous form and pH
(Source: http://www.cotf.edu/ete/modules/waterq3/WQassess3b.html)[16]

A small quantity of carbon dioxide used in the desalination plant post-treatment process is sequestered directly from the air when the pH of the source seawater is adjusted by addition of sulfuric acid in order to prevent RO membrane scaling. A larger amount of CO_2 would be delivered to the Project site by commercial supplier for addition to the permeate. Depending on the supplier, carbon dioxide is of one of two origins: (1) a CO_2 Generating Plant or (2) a CO_2

[16] This chemical reaction and information presented on Figure 4 are well known from basic chemistry of water. *See* American Water Works Association (AWWA) (2007) Manual of Water Supply Practices, M46, Reverse Osmosis and Nanofiltration, Second Edition; http://www.chem1.com/CQ/hardwater.html; http://www.cotf.edu/ete/modules/waterq3/WQassess3b.html. Once the desalinated drinking water is delivered to individual households, only a small portion of this water will be ingested directly or with food. Most of the delivered water will be used for other purposes – personal hygiene, irrigation, etc. The calcium bicarbonate ingested by humans will be dissociated into calcium and bicarbonate ions. The bicarbonate ions will be removed by the human body through the urine (http://www.chemistry.wustl.edu/~courses/genchem/Tutorials/Buffers/carbonic.htm). Since the CO2 is sequestered into the bicarbonate ion, human consumption of the desalinated water will not result in release of CO2. The bicarbonate in the urine will be conveyed along with the other sanitary sewerage to the wastewater treatment plant. Since the bicarbonate is dissolved, it will not be significantly impacted by the wastewater treatment process and ultimately will be discharged to the ocean with the wastewater treatment plant effluent. The ocean water pH is in a range of 7.8 to 8.3, which would be adequate to maintain the originally sequestered CO_2 in a soluble form – see Figure 4 above. Other household uses of drinking water, such as personal hygiene, do not involve change in drinking water pH as demonstrated by the fact that pH of domestic wastewater does not differ significantly from that of the drinking water. A portion of the household drinking water would likely be used for irrigation. A significant amount of the calcium bicarbonate in the irrigation water would be absorbed and sequestered in the plant roots (http://www.pubmedcentral.nih.gov/pagerender.fcgi?artid=540973&pageindex=1). The remaining portion of calcium bicarbonate would be adsorbed in the soils and/or would enter the underlying groundwater aquifer.

Recovery Plant. CO_2 generating plants use various fossil fuels (natural gas, kerosene, diesel oil, etc.) to produce this gas by fuel combustion. CO_2 recovery plants produce carbon dioxide by recovering it from the waste streams of other industrial production facilities which emit CO_2-rich gasses: breweries, commercial alcohol (i.e., ethanol) plants, hydrogen and ammonia plants, etc. Typically, if these gases are not collected via CO_2 recovery plant and used in other facilities, such as the desalination plant, they are emitted to the atmosphere and therefore, constitute a GHG release.

To the extent that it is reasonably available, Poseidon intends to acquire the carbon dioxide from a recovery operation. Use of recovered CO_2 at the Project would sequester 2,100 tons of CO_2 per year in the Project product water. The total annual use of carbon dioxide (i.e., 2,100 tons/CO_2 per year) in the water treatment process was determined based on the daily carbon dioxide consumption presented in Table 4.6-2 of Section 4.6 "Hazards and Hazardous Materials" of the certified Carlsbad desalination project Environmental Impact Report (EIR). The daily consumption of CO_2 in this table is 12,540 lbs of CO_2/day. The annual consumption is calculated as 12,540 lbs/day x 365 days /2,200 lbs/ton = 2,080.5 lbs of CO_2/yr (which was rounded to 2,100 lbs/yr). The daily amount of carbon dioxide in Table 4.6-2 of the EIR was calculated based on the dosage needed to provide adequate hardness (concentration of calcium bicarbonate) in the seawater to protect the water distribution system from corrosion. This amount was determined based on pilot testing of distribution system piping and household plumbing at the Carlsbad seawater desalination demonstration project. The testing was completed using the same type of calcium carbonate chips as those planned to be used in the full-scale operations. Every load of carbon dioxide delivered to the desalination plant site will be accompanied by a certificate that states the quantity, quality and origin of the carbon dioxide and indicates that this carbon dioxide was recovered as a site product from an industrial application of known type of production (i.e., brewery, ethanol plant, etc.), and that it was purified to meet the requirements associated with its use in drinking water applications (i.e., the chemical is NSF approved). The plant operations manager will receive and archive the certificates for verification purposes. At the end of the year, the operations manager will provide copies of all certificates of delivered carbon dioxide to the independent third party reviewer responsible for verification facility compliance with the Energy Minimization and Greenhouse Gas Reduction Plan.

As noted, verification would be provided through certificates of origin received from suppliers of CO_2 delivered to the Project site indicating the actual amount of CO_2 delivered to the site, date of delivery, origin of the CO_2, and the purity of this gas. Poseidon will place conditions in its purchase agreements with CO_2 vendors that require transfer of CO_2 credits to Poseidon and otherwise ensure that the CO_2 is not accounted for through any other carbon reduction program so as to avoid "double counting" of associated carbon credits.

E. Avoided Emissions from Reducing Energy Needs for Water Reclamation.

The Project will result in Avoided Emissions because it will cause a change in operations by the Carlsbad Municipal Water District (CMWD), which owns and operates a water reclamation facility that includes micro-filtration (MF) and RO treatment for 25% of its water supply. The purpose of the MF/RO system is to reduce the salinity of the recycled water to below 1,000 mg/L

so it will be suitable for irrigation. The elevated salinity of the recycled water is due in part to the salinity of the City's drinking water supply.

The Project will effectively eliminate this problem by lowering the salinity in the source water of the communities upstream of the water recycling facility, thereby eliminating the need for operation of the MF/RO portion of the water recycling process. Implementation of the Project will significantly reduce or possibly eliminate the need to operate the MF/RO system, leading to Avoided Emissions from the lower electricity use by CMWD. This will reduce the carbon footprint of the Carlsbad Water Reclamation Facility as follows: 1,950 MWh/yr x 780.79 lbs of CO_2 /MWh = 1,522,541 lbs of CO_2/yr (690 tons of CO_2/yr).

The total actual energy reduction that would result from the higher quality water use upstream of the water recycling facility will be verified annually by CMWD, using actual billing and performance data. This will be accomplished through a comparison of the pre-Project energy use attributable to the RO/MF portion of the water recycling process to the post-Project energy use.

F. Avoided Emissions from Displaced Imported Water.

Another source of Avoided Emissions will result from the Project's introduction of a new, local source of water into the San Diego area; water that will displace imported water now delivered to Customers from the State Water Project (SWP) – a system with its own significant energy load and related carbon emissions.

One of the primary reasons for the development of the Project is to replace imported water with a locally produced alternative drought-proof source of water supply. Currently, San Diego County imports approximately 90% of its water from two sources – the SWP and the Colorado River. These imported water delivery systems consist of a complex system of intakes, dams, reservoirs, aqueducts and pump stations, and water treatment facilities.

The proposed Project will supply 56,000 acre-feet of water per year to the San Diego region. The Project will provide direct, one-to-one replacement of imported water to meet the requirements of the participating water agencies, thus eliminating the need to pump 56,000 acre feet of water into the region.[17]

The 2003 multi-state Colorado River quantitative settlement agreement forced Metropolitan Water District of Southern California (MWD) to reduce its pumping from the Colorado River by 53% -- from 1.20 MAFY to 0.56 MAFY. As a result, MWD now operates its imported water delivery system to base load its Colorado River allotment and draw from the SWP only as needed to serve demand that cannot be met by the lower cost water available from the Colorado River Aqueduct. Consequently, the proposed Project will reduce the Customers demand on the SWP.

[17] *See* Poseidon Resources Corporation Letter to Paul Thayer Re: Desalination Project's Impact on Imported Water Use, November 8, 2007, including attachments from nine water agencies (Attached as Appendix E).

The total amount of electricity needed to provide treated water to Poseidon's public agency partners via the SWP facilities is shown in Table 1. The net power requirement to pump an acre-foot of water through the East Branch of the SWP is 3,248 KWh (source: DWR). Approximately 2% of the SWP water pumped to Southern California is lost to evaporation from Department of Water Resources' reservoirs located south of the Tehachapi Mountains (source: DWR). The evaporation loss results in a net increase of 68.3 KWh per acre-foot of SWP water actually delivered to Southern California homes and businesses. Finally, prior to use, the SWP water must be treated to meet Safe Drinking Water Act requirements. The San Diego County Water Authority (SDCWA) entered into a service contract with CH2M Hill Constructors, Inc., to operate its Twin Oaks Water Treatment Plant with a guaranteed electricity consumption of 100 KWh/AF of water treated (source: SDCWA). The electricity required to deliver an acre foot of treated water to the SDCWA is shown in Table 3.

Table 3 - State Water Project Supply Energy Use

Energy Demand	KWh/AF	Source
Pumping Through East Branch	3248	DWR
Evaporation Loss	68	DWR
Twin Oaks Water Treatment Plant	100	SDCWA
Total	**3416**	

The reduction of demand for imported water is critical to Southern California's water supply reliability, so much so that MWD not only supports the Project, but has also committed $14 million annually to reduce the cost to Poseidon's customers. Under MWD's program, $250 will be paid to water agencies for every acre-foot of desalinated water purchased from the Carlsbad facility, *so long as the desalinated water offsets an equivalent amount of imported water.* MWD has established "Seawater Desalination Policy Principles and Administrative Guidelines" that require recordkeeping, annual data submittals, and MWD audit rights to ensure that MWD water is offset.[18]

The benefits of a reduction in demand on MWD's system are reflected in, among other things, the energy savings resulting from the pumping of water that – but for the Project – would have to continue. For every acre-foot of SWP water that is replaced by water from the proposed Project, 3.4 MWh of electricity use to deliver water to Customers is avoided, along with associated carbon emissions. And since the Project requires 4.4 MWh of electricity to produce one acre-foot of water, the net electricity required to deliver water from the Project to Customers is 1.0 MWh/AF.

Because the Project will avoid the use of 56,000 AFY of imported water to Customers, once in operation, the Project will also avoid 190,641 MWh/yr of electricity consumption otherwise

[18] MWD's program is documented in a June 22, 2007 letter from its General Manager to Peter Douglas, Executive Director of the California Coastal Commission, as well as various contracts with relevant water agencies.

required to deliver that water to Customers, as well as the GHG emissions associated with pumping, treatment and distribution of this imported water. At 780.79 lbs CO_2 per MWh,[19] the total Avoided Emissions as a result of the Project is 67,506 metric tons CO_2/yr.

G. Avoided Emissions through Coastal Wetlands.

The Project also includes the restoration and enhancement of marine wetlands. The restoration project will be in the proximity of the Project. These wetlands will be set-aside and preserved for the life of the Project. Once the wetlands are restored they will act as a carbon "sink" or carbon sequestration project trapping CO_2.

Tidal wetlands are very productive habitats that remove significant amounts of carbon from the atmosphere, a large portion of which is stored in the wetland soils. While freshwater wetlands also sequester CO_2, they are often a measurable source of methane emissions. Coastal wetlands and salt marshes, however, release negligible amounts of greenhouse gases and therefore, their carbon sequestration capacity is not measurably reduced by methane production.

Based on a detailed study completed in a coastal lagoon in Southern California, the average annual rate of carbon sequestration in coastal wetland soils is estimated at 0.033 kg of C/m^2.yr (a 5,000 year average, Brevick E.C. and Homburg J.A., 2004).[20] In tidal ecosystems, sediment accumulation rates (via suspended sediment supply, tidal water flooding, etc.) exhort a major control on carbon sequestration rates. Soil carbon sequestration rates determined recently in the Tijuana Estuary on the Mexico/USA border were determined to be 0.343 kg of C/m^2.yr (Cahoon et. al 1996).[21] (4 = Cahoon, D.R., J.C. Lynch, and A. Powell, Marsh vertical accretion rates in a Southern California estuary, U.S.A., Estuar. Coast. Shelf Sci., 43, 19-32, 1996).

Given that the total area of the proposed wetland project is 37 acres, the carbon sequestration potential of the wetlands is between 4.9 and 51 tons of C/m^2.yr. These numbers are calculated as follows: Sequestration Rate (.033 kg of C/m^2.yr and 0.343 kg of C/m^2.yr) x Area (37 acres = 149,732.5 m^2) x Weight conversion (1000 kg C = 1 metric ton of C) = tons of C sequestered/m^2.yr (as given above). To get from this unit the standard greenhouse gas unit of tons of CO_2 (not C) of sequestered per year, the conversion factor is 3.664. Therefore, the emissions avoided from the wetlands are estimated to be between 18 and 188 tons of CO_2 per year.

In order to verify the actual soil carbon sequestration rate of the proposed wetland ecosystem, site-specific measurements will need to be made. Protocols for wetlands are being currently being developed for inclusion within the Clean Development Mechanism of the Kyoto Protocol, and we will use these protocols until CCAR makes its own wetland protocol available. We anticipate full inclusion wetland protocols to become available within the lifetime of this project. But for the Project, the wetlands mitigation would not occur, and therefore it satisfies the

[19] Since the SWP does not have a published Annual Emissions Report with the CCAR, Poseidon used the certified emission factor for SDG&E system. Poseidon believes this a conservative estimate and will update its calculations when more accurate data is available.

[20] www.slc.ca.gov/Reports/Carlsbad_Desalinization_Plant_Response/Attachment_4.pdf

[21] www.sfbayjv.org/tools/climate/CarbonWtlandsSummary_07_Trulio.pdf

Regulatory Surplus additionality test. (See, Carbon Offset Projects – Definition (Page 16 herein) for a more detailed discussion of the Regulatory Surplus additionality test.)

Table 4 summarizes the on-site and project-related reductions of GHG Emissions.

Table 4 - On-site and Project-Related Reduction of GHG Emissions

Source	Total Annual Reductions in Power Use (MWh/ year saved)	Total Annual Emissions Avoided (metric tons CO_2/ year avoided)
Reduction due to High-Efficiency Design	(28,244)	(10,001)
Green Building Design	(300 to 500)	(106 to 177)
On-site Solar Power Generation	(0-777)	(0-275)
Recovery of CO_2	(NA)	(2,100)
Reducing Energy Needs for Water Recycling	(1,950)	(690)
Reduced Water Importation	(190,641)	(67,506)
Sequestration in Coastal Wetlands	(NA)	(18 to 304)
Subtotal On-site Reduction Measures	(NA)	**(80,421 to 81,053)**

PART III: IDENTIFICATION OF MITIGATION OPTIONS TO OFFSET ANY REMAINING GHG EMISSIONS

Offsite reductions of GHG emissions that are not inherently part of the Project include actions taken by Poseidon to participate in local, regional, state, national or international offset projects that result in the cost-effective reduction of GHG emissions equal to the indirect Project emissions Poseidon is not able to reduce through other measures. One such offset project – the expenditure of one million dollars to reforest areas burned out by fires in the San Diego region in the fall of 2007 – has been identified by the CCC as the first priority among these measures. As set forth in more detail below, other projects will be identified through a selection process beginning about fifteen months before operations commence, starting with the issuance of a Request for Proposal (RFP) for carbon offset projects and renewable energy credits (RECs).

The RFP will require compliance with comprehensive standards for carbon offset projects such as those set forth in AB 32.[22] Working with an experienced, qualified carbon offset broker – together with the California Center for Sustainable Energy (CCSE) and a representative with expertise with greenhouse gas mitigation and energy or air regulatory policy jointly selected with CCC staff, – Poseidon will select the most cost-effective mix that meets the criteria described herein, and then contract for the acquisition or development of the projects selected. The exact nature and cost of the offset projects and RECs will not be known until the RFP process is complete. Offsets or RECs will also be used as the swing mitigation option to "true-up" changes over time to the Project's net indirect GHG emissions, as discussed below.

A. Annual "True-Up" Process

Since the quantity of offsets required will vary from year-to-year, the goal of the annual "True-Up" process is to enable Poseidon to meet the subject year's need for metric tons of offsets by purchasing or banking offsets in the short-term, while allowing Poseidon to make long-term purchases and bank offsets to decrease market exposure and administrative costs. To complete the True-Up process, CCSE will obtain the latest SDG&E emission factor from the annual web-based CARB or CCAR Emissions Report within 60 days of the end of each calendar year, or the date of publication of the CARB or CCAR Emissions Report on the relevant CARB or CCAR web site, whichever is later. Within 120 days of the end of the prior calendar year or publication of the emission factor (whichever is later), CCSE, with assistance from Poseidon as needed, will gather electricity usage data, relevant data regarding Avoided Emissions, and then calculate the necessary metric tons of offsets required for the subject year. The subject year's emissions will be calculated using actual billing data and the emissions factor for the relevant annual period. The subject year's calculated metric tons of offsets will be compared to the amount of metric tons of offsets previously acquired by Poseidon to determine if Poseidon is surplus or deficit for the subject year, and all of this information will be included in the Annual GHG Report to be reviewed by the San Diego Air Pollution Control District ("SDAPCD") for consistency with the requirements of this Plan as discussed below. If there is a deficit of offsets, Poseidon will purchase offsets to eliminate the deficit within 6 months of the date the deficit is concurred with by SDAPCD after its review of the Annual GHG Report. If there is a surplus of offsets, the surplus tons may be carried forward into subsequent years or sold by Poseidon on the open market.

Prior to the commencement of Project operations, Poseidon will be required to purchase offsets sufficient to cover estimated net (indirect) GHG emissions for at least the first year of operation (as determined by CCSE and subject to SDAPCD concurrence), or to cover a longer period of time at Poseidon's option, based on the most recently published SDG&E emission factor from CARB or CCAR and estimated electricity usage data for the first year of the Project period for which offsets are initially purchased. Poseidon will have the option to purchase offsets for any

[22] Part 4, Section 38562(d)(1)&(2) states that CARB regulations covering GHG emission reductions from regulated "sources" must ensure that such reductions are "real, permanent, quantifiable, verifiable, . . . enforceable [and additional]". While the Project is not a "source" under AB 32 and the criteria are not currently defined under implementing regulations, Poseidon will evaluate potential offset projects against the criteria using the best available protocols that employ the same criteria.

longer period of time up to and including the entire 30 year life of the Project, subject to Poseidon's above-stated obligation to address any deficit in credits that may subsequently arise.

B. Carbon Offset Projects – Definition.[23]

An offset is created when a specific action is taken that reduces, avoids or sequesters greenhouse gas (GHG) emissions in exchange for a payment from an entity mitigating its GHG emissions. Examples of offset projects include, but are not limited to: increasing energy efficiency in buildings or industries, reducing transportation emissions, generating electricity from renewable resources such as solar or wind, modifying industrial processes so that they emit fewer GHGs, installing cogeneration, and reforestation or preserving forests.

One type of offset project is Renewable Energy Credits (RECs), also known as Green Tags, Renewable Energy Certificates or Tradable Renewable Certificates. Each REC represents proof that 1 MW of electricity was generated from renewable energy (wind, solar, or geothermal). For GHG offsetting purposes, purchasing an REC is the equivalent of purchasing 1 MW of electricity from a renewable energy source, effectively offsetting the GHGs otherwise associated with the production of that electricity. RECs may be sold separately from electricity.

Poseidon is committed to acquiring cost-effective offsets that meet rigorous standards, as detailed in this Plan. By requiring adherence to the principles, practices and performance standards described here, the Plan is designed to assure that selected offset projects will mitigate GHG emissions as effectively as on-site or direct GHG reductions. Adherence will ensure that the offset projects acquired by Poseidon are real, permanent, quantifiable, verifiable, enforceable, and additional.

Additionality. The concept of "additionality" was introduced in Article 12.5 of the Kyoto Protocol, which states that "emission reductions resulting from each project activity shall be . . . reductions in emissions that are additional to any that would occur in the absence of the certified project activity". Poseidon will assess the additionality of each project proposal on a case-by-case basis. Offset project proposers – i.e., those who respond to an RFP – will be required to demonstrate the additionality of their project. Specifically, Poseidon, working with a third party such as CCSE and subject to concurrence by the greenhouse gas mitigation and energy or air regulatory policy expert, will perform an initial screening of all proposed offset projects against the following additionality tests before evaluating any other aspects of the proposed project.

Along with applicable AB 32 criteria, if any, the carbon offset acquisition process will utilize three widely used tests to determine a project's additionality: 1) Regulatory Surplus Test, 2) Barriers Tests, and 3) Common Practice Test. These tests are based on the Kyoto Protocol's Clean Development Mechanism methodology, as well as the World Resource Institute's GHG Protocol for Project Accounting; and are the emerging norms and best practices in the burgeoning offset market in the United States and internationally.

Test 1: Regulatory Surplus. The Regulatory Surplus Test ensures that the project that is proposed is not mandated by any existing law, policy, statute, regulation, or other legal obligations. Otherwise, it is assumed that the project is being developed to comply with the law or regulation and thus cannot be considered additional to the business as usual scenario.

[23] The following two sections are based on information provided by the Climate Trust (http://www.climatetrust.org/)

Test 2: Implementation Barriers. The implementation barriers tests are at the heart of the additionality determination process. There are three main implementation barriers tests: 1) Financial, 2) Technological, and 3) Institutional. A project must meet at least one of the following barriers tests in order to be considered additional.

Test 2(a): Financial Barriers. The Financial Barriers Test addresses how offset funding impacts the project in question. Financial barriers tests are generally considered to be one of the more rigorous and stringent tests of additionality. There are two main types of financial barriers a project can face: capital constraint and internal rate of return. The Capital Constraint Test addresses whether a project would have been undertaken without offset funding. Internal rate of return indicates whether or not a project would have met established targets for internal rates of return without offset funding. These are not the only acceptable tests of financial barriers, but are the most commonly used.

Positive economic returns do not necessarily make a project non-additional. There are instances where projects with high rates of return remain unimplemented – the energy efficiency sector is the most well know of these examples. To demonstrate additionality for projects that generate rates of return, it can be useful to describe the barriers faced by the project by including a clear explanation of the project's return rate with a pro forma financial analysis showing both the with and without project case. For example, Company Y typically does not pursue project activities unless they provide a 15% rate of return. An energy efficiency upgrade at the facility will generate a 5% rate of return. The additionality case is that offset funding can be used to increase the return of the efficiency measures to a level that is acceptable to management.

Test 2(b): Technological Barriers. There are several categories of assessment that could fall under this test. If the primary reason for implementing a technology is its GHG reduction benefits, that project is generally considered to be additional. For example, if a more energy efficient, though more expensive to manufacture, model of a hot water heater is available and the additional cost is barring its entry into the market, offset funding can help bridge that gap and bring a technology to market that otherwise would not have been. In this case, the GHG reductions resulting from the deployment of the new technology are clearly above and beyond business as usual.

Test 2(c): Institutional Barriers. Institutional barriers can be organizational, social or cultural. If a GHG reduction project falls outside of the normal purview of a company or organization and there is reluctance to implement a project that is not within that purview or to capitalize a project with uncertain returns, offset funding can often assist in overcoming that barrier.

Test 3: Common Practice. This test is intended to determine whether or not a project is truly above and beyond "business as usual". If a practice is widely employed in a field, it is not considered additional.

C. Initial Carbon Offset Acquisition Process and Timeline.

There are three phases to the initial offset acquisition process. It is expected to take up to 12 months from the time of the release of the initial RFP until Emission Reduction Project Agreements (ERPAs) are completed. The development of the RFP should take an additional 3 months. The RFP will be released prior to the commencement of Project operations, and, as stated above, Poseidon will be required to demonstrate the acquisition of offsets for the first year

of the Project before it may begin to operate (as determined by CCSE and subject to SDAPCD concurrence).

- **Phase I: Submission of Project Information Document**. Offset project proponents will be required to complete an application giving sufficient information about the proposed project. The official requirements for submission will be set forth in the RFP. Two examples of a short and long Project Information Document are included in Appendix F.
- **Phase II: Detailed Project Information Document**. A selected short-list of proposals will be invited to submit a more detailed project information document.
- **Phase III: Contract Finalization**. Selected proposals will be invited to finalize an ERPA. The amount of the funding, tons of GHG offsets, and other terms will be set forth in the final ERPA.

D. Project Requirements.

Poseidon will detail in the RFP, which will be subject to review and approval by the Committee (defined in Section F. below), the requirements project proposers must adhere to in order to qualify for consideration. The project requirements will include, at minimum, the following:

- **Minimum project size** (e.g., the project reduces or avoids at least 25,000 metric tons of CO_2 emissions over the contract term).
- **Minimum term for the sale of their emissions reductions** (i.e., terms of 1-5 years, at least 5 years, up to the life of the project, or beyond for sequestration projects).
- **Geographic boundaries** for acceptable projects. Poseidon will establish a hierarchy of geographic preference, beginning with local and regional projects, then in-state, national, and international projects.
- **Contract terms and conditions** based on a standard Emission Reduction Purchase Agreement (ERPA).
- **Price Target** for each metric ton of carbon offset.
- **Timeline and milestone dates**
- **Demonstrate through Evaluation Criteria** set forth in Part III.E below that the project is real, permanent, quantifiable, verifiable, enforceable, and additional.
- **A $1 million investment in reforestation** of areas in the San Diego region impacted by the wildfires that occurred during the fall of 2007.

E. Evaluation Criteria.

The RFP will clearly set forth the criteria to evaluate and select the final projects for contracting. Each project will be evaluated by the Committee to determine whether or not it meets the initial requirements, including whether the project meets the additionality test and is an otherwise eligible project type. Only those that pass these tests will be considered further. Among other factors, proposed offset project applicants will be required to complete an extensive application to allow the Committee to fully evaluate the project. Poseidon will make the final decision on which Committee-approved offset projects to fund. Selection criteria will include at least the following:

1. **Cost Effectiveness.** The measure of cost effectiveness will be defined as U.S. dollars per metric ton. Cost effectiveness will be determined using comparative evaluation criteria, provided that no measure will be deemed cost-effective if it exceeds 110% of the going market price (to the extent a market price for carbon offsets is reasonably discernable) for offsets in the United States. This provision shall not apply to Poseidon's commitment to contribute $1 million towards reforestation of areas in the San Diego region impacted by the 2007 wildfires.
2. **Additional.** The Committee will assess whether the proposed project passes any of the three additionality tests described above.
3. **Reliability of Proposing Entity.** The Committee will consider the qualifications of the proposing entity, the proposing entities past experience with similar projects, if any, and the qualifications of any organizations cooperating with the project. Proposing entities should be required to demonstrate their financial and institutional capability to deliver the GHG emission reductions that they propose. This criterion assesses whether the project is real, permanent and enforceable.
4. **Reliability of Project Concept.** In evaluating the reliability of offsets delivery, the Committee will consider the quality of the project concept and design, and the performance of similar projects. This criterion assesses whether the project is real, permanent and quantifiable.
5. **Monitoring and Verification Plan.** The Committee will require high quality Monitoring and Verification (M&V) Plans to be implemented for all projects. Although final M&V Plans are not expected to be developed until later in the process, a detailed M&V concept is encouraged. This criterion assesses whether the project is permanent, quantifiable, verifiable and enforceable.
6. **Mitigating Financial Risk of Initiative Participants.** The Committee will give preference to projects that reduce the risk that their investment may not yield the anticipated amount of tons of GHG offsets. The Committee will evaluate all the risk mitigation options that applicants propose. This criterion assesses whether the project is real and enforceable.
7. **Willingness to Accept ERPA Terms and Conditions.** This criterion assesses whether the project is enforceable.
8. **Location.** This criterion assesses whether the project will be a local, regional, in-state, national, or international project, with preference given to local, regional and in-state projects.

F. Third-Party GHG Accounting, and Validation.

Throughout the offset selection and implementation process, Poseidon will work with experienced third party brokers that specialize in the evaluation and selection of offset projects. Poseidon will also work with CCSE, an independent third party that will be charged with implementing the offset program and ensuring Poseidon's GHG accounting and RFP process is accurate and conforms to the requirements of this Plan and relevant protocol. An Offset Evaluation and Monitoring Committee (the Committee) shall be formed and will consist of one representative each from CCSE and Poseidon, with a third member from academia to be selected jointly by CCSE and Poseidon, subject to CCC Staff approval. The academician shall have a

background in energy or air regulatory policy and greenhouse gas mitigation. The Committee will have primary responsibility for overseeing the carbon offset purchasing and implementation process. Although Poseidon will have representation on the Committee, CCSE will retain responsibility for ensuring that implementation of the offset program conforms to the Plan and other applicable requirements, including that all offsets available for selection by Poseidon meet the requirements of Part III.C above.

Subject to further review and approval by its governing board, SDAPCD[24] will oversee on an annual basis the work done by Poseidon, CCSE and the Committee, and will manage a publicly accessible database for the Plan. CCSE will prepare and submit to SDAPCD a draft annual report (the Annual GHG Report) that will analyze and validate (1) the annual GHG emission calculations for the Project, (2) the credit or deficit in Poseidon's GHG offset bank, (3) the validity of offset projects against the criteria set forth in Part III.C above, and (4) any other information related to Poseidon's efforts to mitigate GHG emissions resulting from the Project's electricity usage. The Annual GHG Report shall be submitted by CCSE to SDAPCD within 120 days of the end of the prior calendar year or publication of the SDG&E emission factor in the annual CCAR or CARB Emissions Report, whichever is later, as detailed above. SDAPCD will review the Annual GHG Report for consistency with the requirements of this Plan, and send the final report to the CCC and the CSLC, with copies to Poseidon and CCSE. After reviewing the Annual GHG Report, SDAPCD will indicate whether or not Poseidon's activities conform to the Plan. In the event that SDAPCD, after reviewing the Annual GHG Report, concurs that Poseidon has a deficit in its GHG offset bank for a particular year, Poseidon shall purchase offsets sufficient to make up the deficit within six months. If an approved Annual GHG Report demonstrates that Poseidon possesses a surplus of offset credits, Poseidon will be free to carry those credits forward into subsequent years or sell them on the open market.

G. Subsequent RFP Process.

If, after circulating the initial RFP and purchasing offsets sufficient to cover at least the first year of Project operations, Poseidon is at any time required to purchase additional offsets, it will have the option to: (1) purchase offsets on the open market to the extent they are available, that meet the criteria of the Plan and are reviewed and approved by the Committee as consistent with the provisions of Parts III(b) and (e) of the Plan, or (2) issue a subsequent RFP(s) soliciting additional offset projects consistent with the provisions of Parts III(b) and (e) of the Plan. Any subsequent RFP shall be issued from time to time in advance of the time when the actual purchase of additional offsets is expected to be required. The criteria for subsequent RFPs shall be the same as for the initial RFP as outlined in the Plan.

H. Contingency if No GHG Reduction Projects are Reasonably Available

If, after completing the initial RFP process, or any time thereafter, it is determined by the Committee that (i) offset projects in an amount necessary to mitigate the Project's net indirect GHG emissions are not reasonably available; (ii) the "market price" for carbon offsets or RECs is not reasonably discernable; (iii) the market for offsets/RECs is suffering from significant market disruptions or instability; or (iv) the market price has escalated to a level that renders the

[24] Poseidon has initiated discussions with SDAPCD and will provide further details regarding its specific role as they become available.

purchase of offsets/RECs economically infeasible to the Project, Poseidon will, in lieu of funding offset projects or additional offset projects, deposit money into an escrow account to be used to fund GHG offset programs as they become available, with Poseidon to pay into the fund in an amount equal to $10.00 per metric ton for each ton Poseidon has not previously offset, adjusted for inflation from 2008.[25] Prior to establishing the escrow account, the Committee will provide notice to the Executive Director of the CCC of the Committee's determination that funds should be deposited into an escrow account in lieu of purchasing offsets/RECs, pursuant the provisions of this section of the Plan, along with a written summary providing the basis for that decision. The escrow account may be established within thirty (30) days of the Executive Director's receipt of the notice, unless the Executive Director disputes the Committee's determination, in which case the matter shall be referred to the CCC for hearing and resolution.

I. Contingency if New GHG Reduction Regulatory Program is Created.

If, at any time during the life of the Project any of the SDAPCD, South Coast Air Quality Management District (SCAQMD), the California Air Resources Board (CARB), SDG&E or other relevant entity initiates a carbon tax or carbon offset program that would allow Poseidon to purchase carbon offsets or payment of fees to compensate for GHG emissions, Poseidon may, at its option, elect to pay into such a program in order to fulfill all or part of its obligations under the Plan to offset net indirect GHG emissions caused by the Project. By receiving certification from the relevant receiving entity that Poseidon has satisfied its obligations under the applicable regulatory program, Poseidon will be deemed to have satisfied its obligation under the Plan to offset net indirect GHG emissions for the part of the offset obligations under the Plan for which such certification is made. Subject to the approval of the relevant receiving entity, Poseidon may carry over any surplus offsets acquired pursuant to the Plan for credit in the new SDAPCD regulatory program.

J. Examples of Offset Projects.

Offset projects typically fall within the seven major strategies for mitigating carbon emissions set forth below. A similar range and type of offset projects should be expected from a solicitation or purchase by Poseidon, although it is difficult to anticipate the outcome of Poseidon's offset RFP process at present.

1. Energy Efficiency (Project sizes range from: 191,000 metric tons to 392,000 metric tons; life of projects range from: 5 years to 15 years)

- Steam Plant Energy Efficiency Upgrade
- Paper Manufacturer Efficiency Upgrade
- Building Energy Efficiency Upgrades

2. Renewable Energy (Project sizes range from: 24,000 metric tons to 135,000 metric tons; life of projects range from: 10 years to 15 years)

- Small Scale Rural Wind Development

[25] $10.00 per metric ton is a conservative figure, as offset credits were trading at $4.90 per metric ton on the Chicago Climate Exchange as of market close on July 2, 2008.

- Innovative Wind Financing
- Other renewable resource projects could come from Solar PV, landfill gas, digester gas, wind, small hydro, and geothermal projects

3. **Fuel Replacement** (Project size is: 59,000 metric tons; life of project is: 15 years)
   - Fuels for Schools Boiler Conversion Program

4. **Cogeneration** (Project size is: 339,000 metric tons; life of project is: 20 years)
   - University Combined Heat & Power

5. **Material Substitution** (Project size is: 250,000 metric tons; life of project is: 5 years)
   - Cool Climate Concrete

6. **Transportation Efficiency** (Project sizes range from: 90,000 metric tons to 172,000 metric tons; life of projects range from: 5 years to 15 years)
   - Truck Stop Electrification
   - Traffic Signals Optimization

7. **Sequestration** (Project sizes range from: 59,000 metric tons to 263,000 metric tons; life of projects range from: 50 years to 100 years)
   - Deschutes Riparian Reforestation
   - Ecuadorian Rainforest Restoration
   - Preservation of a Native Northwest Forest

Further details on these projects are set forth in Appendix G.

K. Potential Offset Projects Funded by Poseidon.

Participants at the May 2, 2008 CCC Workshop proposed several potential projects that were suggested to be wholly or partially funded by Poseidon through the RFP process. Proposers were not prepared at that time to provide details for these projects other than generally describing the project concept. As a result, it is not yet possible to evaluate them for consistency with the applicable criteria for valid GHG reduction projects. The projects include the following:

- Reforestation Projects in the San Diego area ravaged by the 2007 fires
- Urban Forestry projects
- Estuary sequestration project
- Wetlands projects
- Fleet Fuel Efficiency Increase & Replacement project
- Accelerated Fleet Hybrid Deployment
- Large-Scale Solar PV project on a covered reservoir
- Mini-Hydro from installing pressure reducing Pelton wheels
- Solar Water Heating for a new city recreation swimming pool
- Lawn Mower Exchange Program (gas exchanged for electric mowers)
- Truck Fleet Conversion (especially older trucks from Mexico)

- School Bus Conversions
- White Tag projects or Energy Efficiency projects

These and other potential offset projects must still be evaluated through the RFP process, although one project – the San Diego fire reforestation project identified by the CCC and discussed in more detail below – can be identified at this time and Poseidon has already agreed to commit $1 million towards this program. Poseidon is also exploring off-site renewable energy initiatives with some of its water agency partners as described below.

L. Sequestration through Reforestation.

The CCC identified as a carbon offset project the reforestation of areas in the San Diego Region impacted by the wildfires that occurred during the fall of 2007. Specifically, at the CCC's request, Poseidon has agreed to invest the initial $1.0 million it spends on offset projects in reforestation activities in the San Diego Region. Any Additionality Requirement should therefore be met, since the CCC directed that a reforestation project take place in the San Diego Region impacted by the 2007 fires.

In order to fulfill its reforestation commitment, Poseidon will, prior to commencement of Project operations, enter into a Memorandum of Understanding ("MOU") with a qualified organization or state or local agency, such as, by way of example, CCSE or California State Parks, which MOU will memorialize Poseidon's $1.0 million commitment to reforestation, made fully payable over five years (i.e., $200,000 per year). A fully-executed MOU will be submitted to the CCC before Project operations begin. The qualified entity that administers the reforestation program will be responsible for calculating its carbon sequestration offsets available to credit against Poseidon's offset obligation under the Plan, and will do so based to the extent applicable on the urban forestry protocols currently being developed for CCAR.

According to CCSE, the average cost for planting a 15 gallon suitable, drought tolerant shade tree in San Diego neighborhoods affected by the 2007 wildfires is $100 per tree, including staff time and marketing. There is no annual watering and maintenance cost required for the trees after installation, since property owners would cover these expenses. Expected survival rate would be 90%. Poseidon's $1.0 million investment in urban reforestation with shade trees is expected to yield 9,000 mature trees within 10-15 years of planting. At an annual tree sequestration rate of 60 lbs of CO_2 per tree, the annual carbon footprint reduction associated with the trees would be approximately 245 tons of CO_2 per year (the number could be up to 25% higher if energy demand reductions from trees shading homes were also included in the calculations). As stated earlier, the best available urban forestry protocols will be followed by the qualified entity administering the program, and then verified in accordance with the provisions set forth herein.

M. Renewable Energy Partnerships.

Poseidon is exploring the possibility of participating in renewable energy projects with its water agency partners. Table 5 presents a summary of some of the project opportunities and associated GHG offsets that are under consideration.

Table 5 - Potential Renewable Energy Partnerships

Desalination Project Public Partner/ Location	**Green Power Project Description**	**Annual Capacity of Green Energy Projected to be Generated by the Project (MWh/yr)**
City of Encinitas	95 KW Solar Panel System Installed on City Hall Roof	160
Valley Center Municipal Water District	1,000 KW Solar Panel System	1,680
Rainbow Municipal Water District	250 KW Solar Panel System	420
Olivenhain Municipal Water District / Carlsbad Municipal Water District / City of Oceanside	Various solar and hydro-electric generation opportunities	To Be Determined
Santa Fe Irrigation District	Hydropower generation facility At R.E. Badger Filtration Plant	To Be Determined
	Total Renewable Power Generation Capacity (MWh/yr)	2,260

The contract terms for each of these potential projects will be specific to the particular project. Typically, the amount paid for each project would be the market price for offsets and not necessarily the full price of the project. The offset projects will be verified through the above criteria to ensure they are real, permanent, quantifiable, verifiable, enforceable, and additional.

The total currently quantifiable electricity reduction for the proposed projects described in Table 5 is 2,260 MWh/yr, and the net indirect GHG emissions offset for the Project is projected at 800 tons of CO_2/year. Should Poseidon decide to proceed with one or more of the potential renewable energy partnerships, the total actual energy reduction that would result would be

verified by direct readings of the total electric energy produced by the Project at the partner's electric meter.

N. Implementation Schedule.

An illustrative schedule setting forth timing for implementation of Poseidon's Plan elements, assuming regulatory approval is achieved in August 2008, is set forth in the following Implementation Schedule.

Table 6 - Implementation Schedule for the Plan

Measure	Process	Timing
Regulatory Approval		August 2008
Evaluation Committee Established	Poseidon/CCSE appoint their respective representatives and jointly select academic representative (subject to CCC Staff approval)	Approximately 18 months before operations commence
RFP Developed and Issued	Prepared by Committee consistent with Plan criteria	RFP development to begin approximately 15 months before operations commence; RFP to be issued approximately 12 months before operations commence
Offset and REC Purchases	Committee will select offset projects that meet Plan criteria; Poseidon will choose which eligible projects to fund	Estimated to take up to 12 months from issuance of RFP to completion of agreements for offset projects
Offsets/RECs purchased sufficient for at least first year of operation	Based on the most recently published SDG&E emission factor from CARB/CCAR and estimated electricity usage data for the first year of the Project period for which offsets are purchased, as determined by CCSE subject to SDAPCD concurrence	Prior to commencement of operations
Annual True-Up Process	Obtain new emissions factor from the annual web-based CCAR/CARB emissions report; calculate subject year's emissions using actual billing data and new emissions factor for the subject year; calculate credit or deficit, concurred with by SDAPCD; purchase additional offsets as necessary, or carry-forward or sell surplus offsets	Each year, CCSE will (1) review CCAR/CARB emissions reports within 60 days of the end of the subject calendar year, or the date of publication of the emissions reports on the internet, whichever is later, and (2) calculate Poseidon's credit or deficit of offsets within 120 days of the end of the subject calendar year or the date of publication of CCAR/CARB emissions reports, whichever is later. Poseidon required to purchase offsets necessary to cure any deficit within 180 days from the date an identified deficit is concurred with by the SDAPCD.

O. The Project's Annual Net-Zero Carbon Emission Balance.

Table 7 presents a summary of the assessment, reduction and mitigation of GHG emission for the proposed Project. As shown in the table, up to 83% of the GHG emissions associated with the proposed Project could be reduced by on-site reduction measures, and the remainder would be mitigated by off-site mitigation projects and purchase of offsets or RECs. It should be noted that on-site GHG reduction activities are expected to increase over the useful life (i.e., in the next 30 years) of the Project because of the following key reasons:

SDG&E is planning to increase significantly the percentage of green power sources in its electricity supply portfolio, which in turn will reduce its emission factor and the Project's net indirect GHG emissions.

Advances in seawater desalination technology are expected to yield further energy savings and net indirect GHG emission reductions. Over the last 20 years, there has been a 50% reduction in the energy required for seawater desalination.

Table 7 - Assessment, Reduction and Mitigation of GHG Emissions

Part 1: Identification of GHG Amount Emitted		
Source	**Total Annual Power Use (MWh/ year)**	**Total Annual Emissions (metric tons CO_2/ year)**
Project Baseline Design	274,400	97,165
Part 2: On-site and Project-Related Reduction of GHG Emissions		
Reduction due to High-Efficiency Design	(28,244)	(10,001)
Green Building Design	(300 to 500)	(106 to 177)
On-site Solar Power Generation	(0-777)	(0-275)
Recovery of CO_2	(NA)	(2,100)
Reducing Energy Needs for Water Recycling	(1,950)	(690)
Reduced Water Importation	(190,641)	(67,506)
Sequestration in Coastal Wetlands	(NA)	(18-304)
Subtotal On-site Reduction Measures	(NA)	**(80,421 to 81,053)**
	Net GHG Emissions	**16,422 to 16,112**
Part 3: Additional Off-Site Reductions of GHG Emissions		
Sequestration Through Reforestation	(NA)	(245)
Potential Renewable Energy Partnerships	(0 - 2,260)	(0 - 800)
Subtotal Off-site Measures	(NA)	(245-1,045)
Offset and REC Purchases	(NA)	**(16,499 to 15,067)**
	Net GHG Emissions	0

Assembly Bill No. 32

Passed the Assembly August 31, 2006

Chief Clerk of the Assembly

Passed the Senate August 30, 2006

Secretary of the Senate

This bill was received by the Governor this _____ day of _____, 2006, at _____ o'clock ___M.

Private Secretary of the Governor

EXHIBIT NO. 2
APPLICATION NO. E-06-013
Condition Compliance
Special Condition 10

CHAPTER _____

An act to add Division 25.5 (commencing with Section 38500) to the Health and Safety Code, relating to air pollution.

LEGISLATIVE COUNSEL'S DIGEST

AB 32, Nunez. Air pollution: greenhouse gases: California Global Warming Solutions Act of 2006.

Under existing law, the State Air Resources Board (state board), the State Energy Resources Conservation and Development Commission (Energy Commission), and the California Climate Action Registry all have responsibilities with respect to the control of emissions of greenhouse gases, as defined, and the Secretary for Environmental Protection is required to coordinate emission reductions of greenhouse gases and climate change activity in state government.

This bill would require the state board to adopt regulations to require the reporting and verification of statewide greenhouse gas emissions and to monitor and enforce compliance with this program, as specified. The bill would require the state board to adopt a statewide greenhouse gas emissions limit equivalent to the statewide greenhouse gas emissions levels in 1990 to be achieved by 2020, as specified. The bill would require the state board to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective greenhouse gas emission reductions, as specified. The bill would authorize the state board to adopt market-based compliance mechanisms, as defined, meeting specified requirements. The bill would require the state board to monitor compliance with and enforce any rule, regulation, order, emission limitation, emissions reduction measure, or market-based compliance mechanism adopted by the state board, pursuant to specified provisions of existing law. The bill would authorize the state board to adopt a schedule of fees to be paid by regulated sources of greenhouse gas emissions, as specified.

Because the bill would require the state board to establish emissions limits and other requirements, the violation of which

would be a crime, this bill would create a state-mandated local program.

The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

The people of the State of California do enact as follows:

SECTION 1. Division 25.5 (commencing with Section 38500) is added to the Health and Safety Code, to read:

DIVISION 25.5. CALIFORNIA GLOBAL WARMING SOLUTIONS ACT OF 2006

PART 1. GENERAL PROVISIONS

CHAPTER 1. TITLE OF DIVISION

38500. This division shall be known, and may be cited, as the California Global Warming Solutions Act of 2006.

CHAPTER 2. FINDINGS AND DECLARATIONS

38501. The Legislature finds and declares all of the following:

(a) Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

(b) Global warming will have detrimental effects on some of California's largest industries, including agriculture, wine,

tourism, skiing, recreational and commercial fishing, and forestry. It will also increase the strain on electricity supplies necessary to meet the demand for summer air-conditioning in the hottest parts of the state.

(c) California has long been a national and international leader on energy conservation and environmental stewardship efforts, including the areas of air quality protections, energy efficiency requirements, renewable energy standards, natural resource conservation, and greenhouse gas emission standards for passenger vehicles. The program established by this division will continue this tradition of environmental leadership by placing California at the forefront of national and international efforts to reduce emissions of greenhouse gases.

(d) National and international actions are necessary to fully address the issue of global warming. However, action taken by California to reduce emissions of greenhouse gases will have far-reaching effects by encouraging other states, the federal government, and other countries to act.

(e) By exercising a global leadership role, California will also position its economy, technology centers, financial institutions, and businesses to benefit from national and international efforts to reduce emissions of greenhouse gases. More importantly, investing in the development of innovative and pioneering technologies will assist California in achieving the 2020 statewide limit on emissions of greenhouse gases established by this division and will provide an opportunity for the state to take a global economic and technological leadership role in reducing emissions of greenhouse gases.

(f) It is the intent of the Legislature that the State Air Resources Board coordinate with state agencies, as well as consult with the environmental justice community, industry sectors, business groups, academic institutions, environmental organizations, and other stakeholders in implementing this division.

(g) It is the intent of the Legislature that the State Air Resources Board consult with the Public Utilities Commission in the development of emissions reduction measures, including limits on emissions of greenhouse gases applied to electricity and natural gas providers regulated by the Public Utilities Commission in order to ensure that electricity and natural gas

providers are not required to meet duplicative or inconsistent regulatory requirements.

(h) It is the intent of the Legislature that the State Air Resources Board design emissions reduction measures to meet the statewide emissions limits for greenhouse gases established pursuant to this division in a manner that minimizes costs and maximizes benefits for California's economy, improves and modernizes California's energy infrastructure and maintains electric system reliability, maximizes additional environmental and economic co-benefits for California, and complements the state's efforts to improve air quality.

(i) It is the intent of the Legislature that the Climate Action Team established by the Governor to coordinate the efforts set forth under Executive Order S-3-05 continue its role in coordinating overall climate policy.

CHAPTER 3. DEFINITIONS

38505. For the purposes of this division, the following terms have the following meanings:

(a) "Allowance" means an authorization to emit, during a specified year, up to one ton of carbon dioxide equivalent.

(b) "Alternative compliance mechanism" means an action undertaken by a greenhouse gas emission source that achieves the equivalent reduction of greenhouse gas emissions over the same time period as a direct emission reduction, and that is approved by the state board. "Alternative compliance mechanism" includes, but is not limited to, a flexible compliance schedule, alternative control technology, a process change, or a product substitution.

(c) "Carbon dioxide equivalent" means the amount of carbon dioxide by weight that would produce the same global warming impact as a given weight of another greenhouse gas, based on the best available science, including from the Intergovernmental Panel on Climate Change.

(d) "Cost-effective" or "cost-effectiveness" means the cost per unit of reduced emissions of greenhouse gases adjusted for its global warming potential.

(e) "Direct emission reduction" means a greenhouse gas emission reduction action made by a greenhouse gas emission source at that source.

(f) "Emissions reduction measure" means programs, measures, standards, and alternative compliance mechanisms authorized pursuant to this division, applicable to sources or categories of sources, that are designed to reduce emissions of greenhouse gases.

(g) "Greenhouse gas" or "greenhouse gases" includes all of the following gases: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexaflouride.

(h) "Greenhouse gas emissions limit" means an authorization, during a specified year, to emit up to a level of greenhouse gases specified by the state board, expressed in tons of carbon dioxide equivalents.

(i) "Greenhouse gas emission source" or "source" means any source, or category of sources, of greenhouse gas emissions whose emissions are at a level of significance, as determined by the state board, that its participation in the program established under this division will enable the state board to effectively reduce greenhouse gas emissions and monitor compliance with the statewide greenhouse gas emissions limit.

(j) "Leakage" means a reduction in emissions of greenhouse gases within the state that is offset by an increase in emissions of greenhouse gases outside the state.

(k) "Market-based compliance mechanism" means either of the following:

(1) A system of market-based declining annual aggregate emissions limitations for sources or categories of sources that emit greenhouse gases.

(2) Greenhouse gas emissions exchanges, banking, credits, and other transactions, governed by rules and protocols established by the state board, that result in the same greenhouse gas emission reduction, over the same time period, as direct compliance with a greenhouse gas emission limit or emission reduction measure adopted by the state board pursuant to this division.

(*l*) "State board" means the State Air Resources Board.

(m) "Statewide greenhouse gas emissions" means the total annual emissions of greenhouse gases in the state, including all

emissions of greenhouse gases from the generation of electricity delivered to and consumed in California, accounting for transmission and distribution line losses, whether the electricity is generated in state or imported. Statewide emissions shall be expressed in tons of carbon dioxide equivalents.

(n) "Statewide greenhouse gas emissions limit" or "statewide emissions limit" means the maximum allowable level of statewide greenhouse gas emissions in 2020, as determined by the state board pursuant to Part 3 (commencing with Section 38850).

CHAPTER 4. ROLE OF STATE BOARD

38510. The State Air Resources Board is the state agency charged with monitoring and regulating sources of emissions of greenhouse gases that cause global warming in order to reduce emissions of greenhouse gases.

PART 2. MANDATORY GREENHOUSE GAS EMISSIONS REPORTING

38530. (a) On or before January 1, 2008, the state board shall adopt regulations to require the reporting and verification of statewide greenhouse gas emissions and to monitor and enforce compliance with this program.

(b) The regulations shall do all of the following:

(1) Require the monitoring and annual reporting of greenhouse gas emissions from greenhouse gas emission sources beginning with the sources or categories of sources that contribute the most to statewide emissions.

(2) Account for greenhouse gas emissions from all electricity consumed in the state, including transmission and distribution line losses from electricity generated within the state or imported from outside the state. This requirement applies to all retail sellers of electricity, including load-serving entities as defined in subdivision (j) of Section 380 of the Public Utilities Code and local publicly owned electric utilities as defined in Section 9604 of the Public Utilities Code.

(3) Where appropriate and to the maximum extent feasible, incorporate the standards and protocols developed by the

California Climate Action Registry, established pursuant to Chapter 6 (commencing with Section 42800) of Part 4 of Division 26. Entities that voluntarily participated in the California Climate Action Registry prior to December 31, 2006, and have developed a greenhouse gas emission reporting program, shall not be required to significantly alter their reporting or verification program except as necessary to ensure that reporting is complete and verifiable for the purposes of compliance with this division as determined by the state board.

(4) Ensure rigorous and consistent accounting of emissions, and provide reporting tools and formats to ensure collection of necessary data.

(5) Ensure that greenhouse gas emission sources maintain comprehensive records of all reported greenhouse gas emissions.

(c) The state board shall do both of the following:

(1) Periodically review and update its emission reporting requirements, as necessary.

(2) Review existing and proposed international, federal, and state greenhouse gas emission reporting programs and make reasonable efforts to promote consistency among the programs established pursuant to this part and other programs, and to streamline reporting requirements on greenhouse gas emission sources.

PART 3. STATEWIDE GREENHOUSE GAS EMISSIONS LIMIT

38550. By January 1, 2008, the state board shall, after one or more public workshops, with public notice, and an opportunity for all interested parties to comment, determine what the statewide greenhouse gas emissions level was in 1990, and approve in a public hearing, a statewide greenhouse gas emissions limit that is equivalent to that level, to be achieved by 2020. In order to ensure the most accurate determination feasible, the state board shall evaluate the best available scientific, technological, and economic information on greenhouse gas emissions to determine the 1990 level of greenhouse gas emissions.

38551. (a) The statewide greenhouse gas emissions limit shall remain in effect unless otherwise amended or repealed.

(b) It is the intent of the Legislature that the statewide greenhouse gas emissions limit continue in existence and be used to maintain and continue reductions in emissions of greenhouse gases beyond 2020.

(c) The state board shall make recommendations to the Governor and the Legislature on how to continue reductions of greenhouse gas emissions beyond 2020.

PART 4. GREENHOUSE GAS EMISSIONS REDUCTIONS

38560. The state board shall adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective greenhouse gas emission reductions from sources or categories of sources, subject to the criteria and schedules set forth in this part.

38560.5. (a) On or before June 30, 2007, the state board shall publish and make available to the public a list of discrete early action greenhouse gas emission reduction measures that can be implemented prior to the measures and limits adopted pursuant to Section 38562.

(b) On or before January 1, 2010, the state board shall adopt regulations to implement the measures identified on the list published pursuant to subdivision (a).

(c) The regulations adopted by the state board pursuant to this section shall achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions from those sources or categories of sources, in furtherance of achieving the statewide greenhouse gas emissions limit.

(d) The regulations adopted pursuant to this section shall be enforceable no later than January 1, 2010.

38561. (a) On or before January 1, 2009, the state board shall prepare and approve a scoping plan, as that term is understood by the state board, for achieving the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions from sources or categories of sources of greenhouse gases by 2020 under this division. The state board shall consult with all state agencies with jurisdiction over sources of greenhouse gases, including the Public Utilities Commission and the State Energy Resources Conservation and Development Commission, on all elements of its plan that pertain to energy

related matters including, but not limited to, electrical generation, load based-standards or requirements, the provision of reliable and affordable electrical service, petroleum refining, and statewide fuel supplies to ensure the greenhouse gas emissions reduction activities to be adopted and implemented by the state board are complementary, nonduplicative, and can be implemented in an efficient and cost-effective manner.

(b) The plan shall identify and make recommendations on direct emission reduction measures, alternative compliance mechanisms, market-based compliance mechanisms, and potential monetary and nonmonetary incentives for sources and categories of sources that the state board finds are necessary or desirable to facilitate the achievement of the maximum feasible and cost-effective reductions of greenhouse gas emissions by 2020.

(c) In making the determinations required by subdivision (b), the state board shall consider all relevant information pertaining to greenhouse gas emissions reduction programs in other states, localities, and nations, including the northeastern states of the United States, Canada, and the European Union.

(d) The state board shall evaluate the total potential costs and total potential economic and noneconomic benefits of the plan for reducing greenhouse gases to California's economy, environment, and public health, using the best available economic models, emission estimation techniques, and other scientific methods.

(e) In developing its plan, the state board shall take into account the relative contribution of each source or source category to statewide greenhouse gas emissions, and the potential for adverse effects on small businesses, and shall recommend a de minimis threshold of greenhouse gas emissions below which emission reduction requirements will not apply.

(f) In developing its plan, the state board shall identify opportunities for emission reductions measures from all verifiable and enforceable voluntary actions, including, but not limited to, carbon sequestration projects and best management practices.

(g) The state board shall conduct a series of public workshops to give interested parties an opportunity to comment on the plan. The state board shall conduct a portion of these workshops in

regions of the state that have the most significant exposure to air pollutants, including, but not limited to, communities with minority populations, communities with low-income populations, or both.

(h) The state board shall update its plan for achieving the maximum technologically feasible and cost-effective reductions of greenhouse gas emissions at least once every five years.

38562. (a) On or before January 1, 2011, the state board shall adopt greenhouse gas emission limits and emission reduction measures by regulation to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions in furtherance of achieving the statewide greenhouse gas emissions limit, to become operative beginning on January 1, 2012.

(b) In adopting regulations pursuant to this section and Part 5 (commencing with Section 38570), to the extent feasible and in furtherance of achieving the statewide greenhouse gas emissions limit, the state board shall do all of the following:

(1) Design the regulations, including distribution of emissions allowances where appropriate, in a manner that is equitable, seeks to minimize costs and maximize the total benefits to California, and encourages early action to reduce greenhouse gas emissions.

(2) Ensure that activities undertaken to comply with the regulations do not disproportionately impact low-income communities.

(3) Ensure that entities that have voluntarily reduced their greenhouse gas emissions prior to the implementation of this section receive appropriate credit for early voluntary reductions.

(4) Ensure that activities undertaken pursuant to the regulations complement, and do not interfere with, efforts to achieve and maintain federal and state ambient air quality standards and to reduce toxic air contaminant emissions.

(5) Consider cost-effectiveness of these regulations.

(6) Consider overall societal benefits, including reductions in other air pollutants, diversification of energy sources, and other benefits to the economy, environment, and public health.

(7) Minimize the administrative burden of implementing and complying with these regulations.

(8) Minimize leakage.

(9) Consider the significance of the contribution of each source or category of sources to statewide emissions of greenhouse gases.

(c) In furtherance of achieving the statewide greenhouse gas emissions limit, by January 1, 2011, the state board may adopt a regulation that establishes a system of market-based declining annual aggregate emission limits for sources or categories of sources that emit greenhouse gas emissions, applicable from January 1, 2012, to December 31, 2020, inclusive, that the state board determines will achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions, in the aggregate, from those sources or categories of sources.

(d) Any regulation adopted by the state board pursuant to this part or Part 5 (commencing with Section 38570) shall ensure all of the following:

(1) The greenhouse gas emission reductions achieved are real, permanent, quantifiable, verifiable, and enforceable by the state board.

(2) For regulations pursuant to Part 5 (commencing with Section 38570), the reduction is in addition to any greenhouse gas emission reduction otherwise required by law or regulation, and any other greenhouse gas emission reduction that otherwise would occur.

(3) If applicable, the greenhouse gas emission reduction occurs over the same time period and is equivalent in amount to any direct emission reduction required pursuant to this division.

(e) The state board shall rely upon the best available economic and scientific information and its assessment of existing and projected technological capabilities when adopting the regulations required by this section.

(f) The state board shall consult with the Public Utilities Commission in the development of the regulations as they affect electricity and natural gas providers in order to minimize duplicative or inconsistent regulatory requirements.

(g) After January 1, 2011, the state board may revise regulations adopted pursuant to this section and adopt additional regulations to further the provisions of this division.

38563. Nothing in this division restricts the state board from adopting greenhouse gas emission limits or emission reduction

measures prior to January 1, 2011, imposing those limits or measures prior to January 1, 2012, or providing early reduction credit where appropriate.

38564. The state board shall consult with other states, and the federal government, and other nations to identify the most effective strategies and methods to reduce greenhouse gases, manage greenhouse gas control programs, and to facilitate the development of integrated and cost-effective regional, national, and international greenhouse gas reduction programs.

38565. The state board shall ensure that the greenhouse gas emission reduction rules, regulations, programs, mechanisms, and incentives under its jurisdiction, where applicable and to the extent feasible, direct public and private investment toward the most disadvantaged communities in California and provide an opportunity for small businesses, schools, affordable housing associations, and other community institutions to participate in and benefit from statewide efforts to reduce greenhouse gas emissions.

PART 5. MARKET-BASED COMPLIANCE MECHANISMS

38570. (a) The state board may include in the regulations adopted pursuant to Section 38562 the use of market-based compliance mechanisms to comply with the regulations.

(b) Prior to the inclusion of any market-based compliance mechanism in the regulations, to the extent feasible and in furtherance of achieving the statewide greenhouse gas emissions limit, the state board shall do all of the following:

(1) Consider the potential for direct, indirect, and cumulative emission impacts from these mechanisms, including localized impacts in communities that are already adversely impacted by air pollution.

(2) Design any market-based compliance mechanism to prevent any increase in the emissions of toxic air contaminants or criteria air pollutants.

(3) Maximize additional environmental and economic benefits for California, as appropriate.

(c) The state board shall adopt regulations governing how market-based compliance mechanisms may be used by regulated entities subject to greenhouse gas emission limits and mandatory

emission reporting requirements to achieve compliance with their greenhouse gas emissions limits.

38571. The state board shall adopt methodologies for the quantification of voluntary greenhouse gas emission reductions. The state board shall adopt regulations to verify and enforce any voluntary greenhouse gas emission reductions that are authorized by the state board for use to comply with greenhouse gas emission limits established by the state board. The adoption of methodologies is exempt from the rulemaking provisions of the Administrative Procedure Act (Chapter 3.5 (commencing with Section 11340) of Part 1 of Division 3 of Title 2 of the Government Code).

38574. Nothing in this part or Part 4 (commencing with Section 38560) confers any authority on the state board to alter any programs administered by other state agencies for the reduction of greenhouse gas emissions.

PART 6. ENFORCEMENT

38580. (a) The state board shall monitor compliance with and enforce any rule, regulation, order, emission limitation, emissions reduction measure, or market-based compliance mechanism adopted by the state board pursuant to this division.

(b) (1) Any violation of any rule, regulation, order, emission limitation, emissions reduction measure, or other measure adopted by the state board pursuant to this division may be enjoined pursuant to Section 41513, and the violation is subject to those penalties set forth in Article 3 (commencing with Section 42400) of Chapter 4 of Part 4 of, and Chapter 1.5 (commencing with Section 43025) of Part 5 of, Division 26.

(2) Any violation of any rule, regulation, order, emission limitation, emissions reduction measure, or other measure adopted by the state board pursuant to this division shall be deemed to result in an emission of an air contaminant for the purposes of the penalty provisions of Article 3 (commencing with Section 42400) of Chapter 4 of Part 4 of, and Chapter 1.5 (commencing with Section 43025) of Part 5 of, Division 26.

(3) The state board may develop a method to convert a violation of any rule, regulation, order, emission limitation, or other emissions reduction measure adopted by the state board

pursuant to this division into the number of days in violation, where appropriate, for the purposes of the penalty provisions of Article 3 (commencing with Section 42400) of Chapter 4 of Part 4 of, and Chapter 1.5 (commencing with Section 43025) of Part 5 of, Division 26.

(c) Section 42407 and subdivision (i) of Section 42410 shall not apply to this part.

PART 7. MISCELLANEOUS PROVISIONS

38590. If the regulations adopted pursuant to Section 43018.5 do not remain in effect, the state board shall implement alternative regulations to control mobile sources of greenhouse gas emissions to achieve equivalent or greater reductions.

38591. (a) The state board, by July 1, 2007, shall convene an environmental justice advisory committee, of at least three members, to advise it in developing the scoping plan pursuant to Section 38561 and any other pertinent matter in implementing this division. The advisory committee shall be comprised of representatives from communities in the state with the most significant exposure to air pollution, including, but not limited to, communities with minority populations or low-income populations, or both.

(b) The state board shall appoint the advisory committee members from nominations received from environmental justice organizations and community groups.

(c) The state board shall provide reasonable per diem for attendance at advisory committee meetings by advisory committee members from nonprofit organizations.

(d) The state board shall appoint an Economic and Technology Advancement Advisory Committee to advise the state board on activities that will facilitate investment in and implementation of technological research and development opportunities, including, but not limited to, identifying new technologies, research, demonstration projects, funding opportunities, developing state, national, and international partnerships and technology transfer opportunities, and identifying and assessing research and advanced technology investment and incentive opportunities that will assist in the reduction of greenhouse gas emissions. The committee may also advise the state board on state, regional,

national, and international economic and technological developments related to greenhouse gas emission reductions.

38592. (a) All state agencies shall consider and implement strategies to reduce their greenhouse gas emissions.

(b) Nothing in this division shall relieve any person, entity, or public agency of compliance with other applicable federal, state, or local laws or regulations, including state air and water quality requirements, and other requirements for protecting public health or the environment.

38593. (a) Nothing in this division affects the authority of the Public Utilities Commission.

(b) Nothing in this division affects the obligation of an electrical corporation to provide customers with safe and reliable electric service.

38594. Nothing in this division shall limit or expand the existing authority of any district, as defined in Section 39025.

38595. Nothing in this division shall preclude, prohibit, or restrict the construction of any new facility or the expansion of an existing facility subject to regulation under this division, if all applicable requirements are met and the facility is in compliance with regulations adopted pursuant to this division.

38596. The provisions of this division are severable. If any provision of this division or its application is held invalid, that invalidity shall not affect other provisions or applications that can be given effect without the invalid provision or application.

38597. The state board may adopt by regulation, after a public workshop, a schedule of fees to be paid by the sources of greenhouse gas emissions regulated pursuant to this division, consistent with Section 57001. The revenues collected pursuant to this section, shall be deposited into the Air Pollution Control Fund and are available upon appropriation, by the Legislature, for purposes of carrying out this division.

38598. (a) Nothing in this division shall limit the existing authority of a state entity to adopt and implement greenhouse gas emissions reduction measures.

(b) Nothing in this division shall relieve any state entity of its legal obligations to comply with existing law or regulation.

38599. (a) In the event of extraordinary circumstances, catastrophic events, or threat of significant economic harm, the Governor may adjust the applicable deadlines for individual

regulations, or for the state in the aggregate, to the earliest feasible date after that deadline.

(b) The adjustment period may not exceed one year unless the Governor makes an additional adjustment pursuant to subdivision (a).

(c) Nothing in this section affects the powers and duties established in the California Emergency Services Act (Chapter 7 (commencing with Section 8550) of Division 1 of Title 2 of the Government Code).

(d) The Governor shall, within 10 days of invoking subdivision (a), provide written notification to the Legislature of the action undertaken.

SEC. 2 No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because the only costs that may be incurred by a local agency or school district will be incurred because this act creates a new crime or infraction, eliminates a crime or infraction, or changes the penalty for a crime or infraction, within the meaning of Section 17556 of the Government Code, or changes the definition of a crime within the meaning of Section 6 of Article XIII B of the California Constitution.