



DESALINATION TASK FORCE MEMORANDUM

TO: DESALINATION TASK FORCE
FROM: PROGRAM MANAGERS
SUBJECT: ENERGY STUDY STATUS REPORT AND PROPOSED EVALUATION CRITERIA
DATE: MAY 18, 2011

RECOMMENDATION: That the **scwd**² Desalination Task Force receive the Energy Study status report and provide input on preliminary carbon mitigation and renewable energy project evaluation criteria, criteria weighting, and mitigation goal selection.

BACKGROUND: Task Force received the first Energy Study status report at the April 20, 2011 **scwd**² Task Force meeting. This Memorandum serves as the second status report. This status report will update the Task Force on Energy Study work progress, introduce members of the Technical Working Group (TWG), and provides an update on the Energy Study schedule.

In addition to the above mentioned informational items, the Task Force is also being asked to review, comment and approve a preliminary list of carbon mitigation and renewable energy project evaluation criteria. These criteria were developed by staff, are consistent with industry standards, and were presented to the Task Force at the November 18, 2009 meeting. The Energy Study TWG will be convening within the next few weeks to make their recommendation for carbon mitigation projects to further the study based on these specific evaluation criteria.

Energy Study Project Update

Work Completed: In the last month, staff has completed the final draft of the Energy Projections and Potential Greenhouse Gas Reduction Goals report, formed the TWG, and held the TWG kickoff meeting.

Current Work: Staff will spend the next several weeks facilitating the TWG as it engages in the development of the Energy Study. By the beginning of June, the TWG will have met twice (TWG kickoff meeting and carbon mitigation project workshop) to discuss the following aspects of the Study:

- Energy White Paper (Kickoff Meeting)
- Energy projections and potential greenhouse gas reduction goals (Kickoff Meeting)
- Carbon mitigation and renewable energy project evaluation criteria (Kickoff Meeting)
- List of potential carbon mitigation and renewable energy projects (Carbon Mitigation Project Workshop)

Staff is currently seeking additional participants for the carbon mitigation project workshop. In addition to feedback from the TWG members, staff and K/J are interested in bringing in local/regional experts in specific carbon mitigation and renewable energy technologies.

Current workshop participants:

- Paul Brown, UCSC student to discuss Bloom fuel cells
- Rick Meyer, local energy audit consultant to discuss renewable power purchase agreements

Other potential workshop participants:

- Ecology Action staff
- County of Santa Cruz staff
- local solar experts

TWG Members: The following individuals have accepted our invitation to participate in the TWG for the Energy Study:

- James Barsimantov
- Shahid Chaudhry
- Ross Clark
- Brent Haddad
- Dan Haifley
- Lon House
- Roxanna Pourzand

Below are brief bios to provide their background and level of expertise related to water, energy and mitigation projects.

James Barsimantov, PhD: Dr. Barsimantov received his Ph.D. in Environmental Studies from the University of California, Santa Cruz with a focus on environmental economics, natural resource management, and geographic information systems (GIS). His expertise in greenhouse gas emissions inventories, climate action planning, and offsets development expanded during his work for the UC Santa Cruz Chancellor's Council on Climate Change. Dr. Barsimantov has worked to plan and implement carbon emissions reductions strategies through alternative energy development, transportation, and greening projects, and is working with a national committee to review new draft Scope 3 GHG Protocols recently completed by the World Resources Institute. Dr. Barsimantov has also worked on the development of California Climate Action Registry protocols.

Shahid Chaudhry: Mr. Shaudhry is currently the Water-Energy Efficiency Program Manager for the California Energy Commission. With over 20 years of experience on various aspects of water-energy-carbon nexus, Mr. Chaudhry is Program Manager and staff expert for the California Energy Commission's energy efficiency program on existing and emerging treatment technologies in the water and wastewater arena. He chairs desalination and energy committees of the CA-NV Section of the American Water Works Association, serves on the Board of

Directors of the Affordable Desalination Collaboration, and is a member of various national and international professional associations, project advisory committees, and collaborations on the water-energy-environment subject.

Ross Clark: Serving as the City of Santa Cruz's Climate Change Coordinator, Mr. Clark authored the draft Climate Action Plan that is expected to be ratified by the City Council this year. The Plan effectively outlines current scientific principles regarding greenhouse gas emissions and climate change, and discusses the City's strategies to reach its GHG reduction goals. In development of the CAP, Mr. Clark has worked with various external partners including the Climate Action Compact (partnership between the County and City of Santa Cruz and UCSC), Ecology Action, and the Silicon Valley Joint Venture –Public Sector Climate Taskforce. Mr. Clark will serve as the City's liaison to the TWG.

Brent Haddad, PhD: Dr. Haddad is the Founder and Director of the Center for Integrated Water Research at UCSC. As Director, Dr. Haddad leads the Center to think broadly about how university research can provide value to water practitioners. He has over 10 years of experience in the field of water and wastewater. In addition to leading the Center, he is a Professor of Environmental Studies with the University of California, Santa Cruz, teaching courses on environmental policy, economics and fresh water policy. Professor Haddad holds an M.B.A. in Business & Public Policy and a Ph.D. in Energy and Resources. Professor Haddad's research focuses on fresh water policy and management, including urban water management strategies, utility-stakeholder communications, and long-range planning. Currently, he is Principle Investigator of a \$2.6 million two-year research project focusing on how municipalities can evaluate desalination as a new water supply option.

Dan Haifley: Mr Haifley has been the Executive Director of O'Neill Sea Odyssey since 1999, a program that engages and educates youth about the marine habitat and the importance of the relationship between the living sea and the environment. Mr. Haifley served as Chief Aide and District Chief of Staff for the late California Senate Majority Leader Henry J. Mello from 1993 until 1996; Executive Director of Save Our Shores from 1986 to 1993; and Community Affairs Officer for PG&E in the Monterey Bay from 1997 to 1999. Mr. Haifley also serves as a Commissioner for the Santa Cruz County Commission on the Environment that acts as an advisory body to, and resource for, the County Board of Supervisors. The Commission is charged with recommending policies and action programs designed to improve and protect the environment.

Lon House, PhD: Dr. House's expertise is in the water-energy nexus. He is a Certified Energy Manager (CEM) and a Certified Sustainable Development Professional (CSDP) with the Association of Energy Engineers. He is currently the CoDirector of Hydro Power for the U.C. Davis Energy Institute. He worked for the California Energy Commission as a utility planner, and he was the chief utility planner for the California Public Utilities Commission. In 1990 he went out into the consulting business, starting his own business (Water and Energy Consulting). He has been the Association of California Water Agencies (ACWA) energy consultant since 1992, representing 500 water agencies which are responsible for over 90 percent of the water delivered in California; the Regional Council of Rural Counties (RCRC) energy advisor, representing 30 rural California counties encompassing over one-half of the land area of California; and an energy consultant for the Attorney General of the State of California.

Roxanna Pourzand: Ms. Pourzand is an undergraduate student at UCSC double majoring in Environmental Studies and Economics. She is interning for the TWG and will be serving as the UCSC student liaison to the TWG. Ms. Pourzand will be conducting carbon mitigation project research for the TWG in addition to holding student workshops on campus to gain valuable feedback from the student community on the Energy Study.

Other: The County Planning Department will send a representative to the May TWG meeting. This person (yet to be assigned) would act in a similar capacity as Mr. Ross Clark.

Future Work and Tentative Schedule: Energy Study work progress remains on schedule with minor changes reflected below. Staff will focus the next several months on narrowing down potential mitigation projects for each agency with input from K/J, the TWG and the TF.

| Task | Participants | Approximate Date |
|--|--|-------------------------|
| Convene TWG kickoff meeting | Task Force | 5/12/11 |
| Provide input on mitigation project evaluation criteria, weighting, goal selection | Task Force | 5/18/11 |
| Mitigation Project Workshop: Develop Short List(s), Criteria, Weighting | Staff, K/J, TWG, additional participants | ~June 2011 |
| Approval of Criteria and Weighting | Task Force | ~June 2011 |
| Review of Detailed Evaluation of Short List Mitigation Options | Staff, K/J and TWG | ~July/Aug 2011 |
| Review Short List and Recommend Mitigation Goal | Task Force | ~August 2011 |
| Submit Draft Energy Study for Staff and TWG review and comment | K/J | ~September 2011 |
| Present the Draft Energy Study to the scwd ² Task Force | Staff, K/J | ~October 2011 |

Mitigation Project Evaluation Criteria

During development of the Energy Study, potential renewable energy and carbon mitigation projects will be evaluated and ranked based on a matrix of weighted criteria. Staff and K/J have compiled a list of potential project evaluation criteria that can be used to determine the ranking and feasibility of each alternative. Potential criteria may include:

- Local Benefit
- Amount of Energy Produced or GHG’s Mitigated
- Technical Maturity and Reliability
- Environmental and Community Impacts
 - Land, Air, Water, Waste, Noise, Aesthetics
- Operational Complexity
- Cost: Capital, O&M and \$/kWh saved or produced

Criteria Selection: Staff will continue to evaluate and define these criteria and requests input from the Task Force by either approving these criteria or proposing additional criteria.

Criteria Weighting: Task Force approval will be required for the weighting of each criteria on an approved shortlist. Weighting of the criteria will reflect the values and objectives of each agency and therefore could be different for each agency. One alternative could be requesting staff from each agency, in conjunction with the TWG, to recommend weighting of the criteria for each agency approval.

Goal Selection: Finally, each agency will need to select a goal to which greenhouse gases are mitigated. As mentioned in prior Task Force meetings, in the absence of a clear regulatory goal, there is some discretion given to each agency as to its selection. Goals range from Net Carbon Neutral to Carbon Free with a number of other alternatives in between. While they have similar implications in terms of mitigation requirements, they differ in complexity of implementation. Staff recommends deferring making a final selection until the study has been further advanced.

FISCAL IMPACT: There is no fiscal impact associated with this item.