



Lawrence Livermore National Laboratory

Office of Strategic Outcomes

May 9, 2011
Lawrence Livermore National Lab
L-184
7000 East Ave
Livermore, CA 94550
USA
Friedmann2@llnl.gov
+1-925-423-0585 (of)
+1-925-667-7159 (mo)

To: Steve Ghadiri, P.E.
DER Integration program Manager
PIER Program, California Energy Commission

Cc: Mike Gravely, CEC

Dear Mr. Ghadiri,

We are looking forward to working with the CEC and the PIER program on our proposed study: *Planning for Generation, Storage, and Demand Response to Accommodate Intermittent Generation*. As we have indicated during meetings with Commissioner Weisenmiller and his staff, U.S. competitiveness and energy security are key missions of Lawrence Livermore National Laboratory. Assisting the CEC with power system modeling is viewed as squarely within that mission. We believe that our 50 years of experience utilizing large scale computing to solve complex national security problems can be leveraged to help the California Energy Commission plan for the State's energy future.

Please understand that in addition to this project, there are numerous other projects currently underway at Livermore that when taken together will be of direct complementary benefit to the proposed tasks on this project. Attachment A is a list of some of these current projects, in particular projects that are internally funded to satisfy key Lab mission needs in Energy and Environmental Security. These complementary efforts total \$800,000 in FY 2011, part of an overall \$1,230,000 investment between 2009 and today, with a potential additional investment of \$1,550,000 for the rest of FY2011 and FY 2012 (the duration of the proposed project.).

Please contact Julio Friedmann at 925.423.0585 (friedmann2@llnl.gov) or Patrick Dempsey at 925.423.1868 (dempsey4@llnl.gov) if you would like to discuss this issue further.

Regards,
Julio Friedmann
Energy and Environmental Security Program
Lawrence Livermore National Laboratory

Dept/org reference number (optional)



Attachment A
Current Project List for 2009-2011 (*Pending projects in italics*)

Name of Project	How Project Complements the Proposed CEC Effort	Total Investment
“Plexos” computational acceleration project (2011)	This investment was aimed at increasing the computational efficiency and speed of Plexos runs. To date, this has led to a 1000 fold increase in the number of scenario runs per day.	\$450k
Smart-Grid industrial engagement (2010-2011)	This investment supported technical and economic exchange with utility and technology experts to better understand current technical constraints on grid infrastructure limits and operations, and to create new metrics and propositions for economic success cases	\$450k
Center for Energy System Informatics (2011)	This investment supports key staff at LLNL to create a knowledge and data infrastructure for energy systems. This includes the creation of data sharing platforms, portals for data transfer, and preliminary data fusion platforms and representations	\$150k
Green Data Oasis (2009)	This investment supports rapid transfer of large volumes of unclassified data through computational trunk lines	\$180k
<i>Large-scale energy model scale-up (late 2011 and 2012)</i>	<i>This project provides the computational infrastructure and capabilities to increase the scale of energy systems models. This includes >100x increase in resolution, >100x increase in computational speed, and >1000x increase in uncertainty quantification and parameterization</i>	<i>\$1.550m</i>