



2008 Internship Program at Energy and Environmental Economics, Inc. (E3)

About E3

Energy and Environmental Economics, Inc (E3), a small economics and regulatory consulting firm in downtown San Francisco serving the electric power industry, is seeking one to two motivated graduate students for a summer internship position.

Founded in 1993, E3 has remained on the forefront in electric rate design, integrated resource planning, energy efficiency and distributed generation, transmission planning, and financial evaluation for 15 years. E3 complements this traditional expertise with state-of-the art analysis in such emerging fields as climate change policy, renewable energy, demand response, and distributed generation. E3 works with a broad client base including utilities, energy developers, and policy makers at the state and federal government. E3 regularly publishes its research findings in scholarly journals. In recent years, our success has fueled modest growth and career opportunities for recent graduates.

The E3 Internship Program

The summer internship program at E3 provides top graduate students an opportunity to work on emerging topics with industry experts. Successful applicants are expected to select a topic related to E3's current projects and develop a stand-alone, publishable research product over the course of the summer. Interns will also contribute to active consulting engagements. The internship program has three goals:

1. Provide students the opportunity to work on their selected topic in a professional consulting atmosphere where their research can be put into immediate practice;
2. Provide students an opportunity to develop a research 'deliverable' that they can use as the basis of future research, publications, and applications;
3. Provide E3 an opportunity to work with top students who may be interested in consulting careers after graduation.

Intern Stipend, Location and Logistics

A stipend for graduate student interns of \$3,000 per month is available for successful applicants. Applicants will not become an employee of E3.

E3 is located at 101 Montgomery Street in downtown San Francisco, easily accessible by BART and Muni. Interns are expected to work regular business hours at the E3 office.

Application Process and Due Date

To apply, please review the list of E3 projects below and write no more than a page describing the project that you would like to spend the summer working on. Then email the description along with your resume, a single faculty reference (name, phone, and email), and an unofficial transcript to recruiting@ethree.com by **April 11, 2008**. Depending on the applications received, we may have telephone or face to face interviews as schedules and logistics permit. We expect to make a decision by April 25, 2008 and will select one or two applicants.

Project List

The list of potential internship topics below comes directly from ongoing consulting engagements at E3. We have a staff member available to act as a mentor in each area. Projects involving topics not on the list may still be accepted if the proposals are exceptional and we can find an E3 mentor to support the intern in developing his or her 'deliverable'. If you would like to pursue a different topic, email a short description to recruiting@ethree.com to learn whether there is a fit.

Energy efficiency supply curve >\$0.06/kWh. California and other states have committed to implement 'all cost-effective energy efficiency' (e.g. California Energy Action Plan II, National Action Plan for Energy Efficiency). Generation costs have risen steeply in recent years, while benefit-cost ratios for utility energy efficiency programs remain ~ 2.0, suggesting significant opportunities for cost-effective expansion of these programs. This project would focus on data collection and analysis to build a supply curve of energy efficiency measures that are feasible at higher costs than currently found in utility programs.

Modeling of Plug-in Hybrid Electric Vehicle (PHEVs) usage patterns. Numerous auto manufacturers have announced that they will be releasing PHEVs in the near term (2010 model year and beyond). As policy makers, electric utilities, and the auto industry consider PHEV pricing, incentives, and impacts, there is an analytical gap in translating customer driving patterns for different vehicle types into electric consumption profiles and gasoline savings. This project would use available data on driving patterns of existing vehicles and assumptions about PHEV characteristics to model time-varying consumption profiles.

Meta-analysis of California AB32 carbon market. There have been several large studies completed, and more underway, on the impact of California's AB32 legislation. This project would perform a meta-analysis of the results and information to date and summarize understanding across these studies with a particular emphasis on uncertainty. The intern would likely attend several CPUC or Air Resources Board meetings on the AB32 Scoping Plan.

Modeling energy embedded in water use. California has an elaborate water supply infrastructure that uses a significant fraction of the state's electricity for pumping and transport. Current analyses typically use average values of the energy and emissions embedded in water use. A more accurate, marginal methodology is needed to forecast loads and assess the energy and emissions benefits of water-use efficiency programs. This project will develop a marginal analysis methodology based on regional, time-varying profiles of energy used in water supply and delivery.

Renewable energy and transmission planning. Renewable resources are often located long distances from load centers and therefore require high-voltage transmission to deliver the energy to loads. Access to the transmission grid can therefore be an impediment to renewable energy market penetration. This project would delve into federal transmission access and pricing rules and their relationship to state renewable energy procurement. One potential project area would be developing methods for providing firm transmission service to remote renewables (e.g., generator redispatch, "spilling" wind during peak transmission load conditions). Another would involve developing load and resource tables that can be used by the CPUC in comparing utility transmission plans with long-term energy plans.

Solar thermal market transformation. Significant uncertainty currently surrounds the potential for cost reductions in generation from central-station solar thermal plants. This project would investigate the key drivers of this uncertainty, disaggregating cost components and identifying technical barriers, in order to assess potential state-level incentive policies aimed at reducing long-term solar thermal plant costs.