Careers in the Field of International Energy and Environment

by Eric Martinot

Many aspiring to work in the international energy and environment field ask me what sort of background one should have. The field is full of diverse backgrounds, from physics to law, engineering to economics, geography to public policy, geology to sociology. But one common quality of successful researchers, managers, and academics in the field is the ability to think in an interdisciplinary, integrative fashion, combining knowledge from several different fields. For example, understanding the constraints and opportunities of using renewable energy in a particular situation is not just a question of technical know-how, but may require understanding of project finance, geographic information systems, electric power sector regulation, power pricing and purchase contracts, demographics of rural kerosene use, rural micro-finance, small business planning, political economy, and/or development economics. Surprisingly, the field is still relatively small when it comes to true interdisciplinary thinking linked to policy, and still needs good people.

There are some good interdisciplinary energy and environment university programs which have a strong international focus. Graduates of these programs have an edge over others because they are trained to think outside of disciplinary specializations, drawing connections among technology, policy, economics, business and finance, environmental science, ecology, anthropology, and/or geography, and addressing specific energy and environmental problems. Examples in the United States are the Energy and Resources Group at the University of California Berkeley, the J.F.K. School of Government at Harvard, the Technology and Policy Program at M.I.T., the Center for Energy and Environmental Studies at Boston University, the Fletcher School of Law and Diplomacy at Tufts University, the Woodrow Wilson School at Princeton, the Center for Energy and Environmental Policy at the University of Delaware, the School of Public Affairs at the University of Maryland, and the School of Advanced International Studies at Johns Hopkins. Students in more traditional disciplinary programs can broaden their experience as much as possible through other course offerings and interdisciplinary research.

Other important qualities of those in the field include language and cultural skills in a particularly country or region, which can be needed for field work. Often the only way to obtain information or understanding is to visit local people and gather information from them through documents, interviews, observations, etc. The material simply isn't available in published literature, particularly if local people with the necessary knowledge don't speak English or are not fully "connected" to the outside world. Language and cultural skills may also be important for helping agencies or organizations from multiple countries work together. Good writing and communication skills are also essential, as is an ability to think in "whole system" terms rather than focus on individual pieces. Other international or policy experience not related to energy and environment is often valuable.

How does one apply this background? One can obviously teach in an academic setting, although finding interdisciplinary positions is more challenging than finding traditional disciplinary ones. One can work in industry, managing specific projects or formulating

corporate strategy (two examples of major corporations becoming involved in renewable energy are Shell and British Petroleum). One can work for a variety of research institutes, such as the World Resources Institute and the Worldwatch Institute, putting out policy papers, distributing educational materials to general public, and assisting with industry/government partnerships. Similar roles can be had in a number of international NGOs (non-governmental organizations) that work to advocate energy and environment policies and to promote public awareness, such as the World Wildlife Fund, the Natural Resources Defense Council, and Greenpeace. One can work for a donor agency, multilateral agency, or foundation, such as various United Nations agencies, the World Bank, or the MacArthur and Rockefeller Foundations, to name but a few, to manage and implement specific international projects or manage a grant-making program. One can work for a government agency or laboratory, such as the Environmental Protection Agency, Department of Energy, National Renewable Energy Laboratory, or Lawrence Berkeley Laboratory in their international divisions, assisting other countries to understand policies and technologies for improving environment and sustainable energy. And one can be a consultant to virtually any of the above-mentioned organizations, as they often need specific expertise for specific periods of time as they prepare projects, understand opportunities, or evaluate on-the-ground results. Project work often proceeds in fits and starts, with specific needs occurring at very specific times. Here professional networks are key, including conferences and meetings.

The bottom line? There are many energy and environmental problems out there requiring strong interdisciplinary, analytical, and people skills. It's not an easy field within which to become well-versed or find a role, and one can feel an "outsider" of traditional professional or academic groupings. But the problems facing our societies and planet are enormous, the transition to a more sustainable future urgent, and the opportunities to contribute available.