



A student-run newsletter for the Energy and Resources Group Community

Welcome to the 2nd issue of Life on ERG! We have a new layout that is packed with interesting ERG happenings. Enjoy!

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Spring 2001 - ERG Colloquium

Wednesday 4:00 - 6:00 PM 2 Le Conte Hall

February 14 Timothy Duane, Associate Professor of City and Regional Planning, UCB

Water Over the Dam? PG&E's Proposed Hydroelectric System Divestiture and the California Energy Crisis

February 21 Stephen J. DeCanio, Dept.of Economics, UCSB

Multiple Equilibria and the Theory of Value: Implications for Integrated Assessment Modeling

February 28 Michael Nacht, Dean, Goldman School of Public Policy, UCB; TBA

March 7 Ignacio H. Chapela, Assistant Professor, ESPM, UCB

March 14 Ronnie D. Lipschutz, Associate Professor, Department of Politics, UCSC

Regulation for the Rest of Us? Activists, Capital, States, and the Demand for Global Social Regulation

SAVE THE DATE!

April 19, 2001 ERG Energy Forum

Sibley Auditorium, UC Berkeley, 3-5:00 PM.

Re-De-Regulation: Planning, Learning, Blundering and the Future of Electricity in California.

Also on April 19, 2001, at 6:00 PM, Sibley Auditorium

The ERG Ninth Annual Lecture featuring:

DR. ARTHUR ROSENFELD CALIFORNIA ENERGY COMMISSION

Seating is limited - first come, first served. For further information please call 642-1640.

Sponsored by the Energy and Resources Group.

March 21 Thayer Scudder, Professor, Division of the Humanities, California Institute of Technology The World Commission on Dams and the Global Need for a New Development Paradigm?

April 4 Denise Mauzerall, Assistant Professor, Woodrow Wilson School, Princeton University The Climate-Economic Interface: Atmospheric Ozone Transport and Impacts in Asia

April 11 Lisa Naughton, Assistant Professor, Department of Geography, U. of Wisconsin-Madison Wildlife in Agro-Ecosystems in the Peruvian Amazon

April 18 TBA; April 25 TBA

May 2 Astrid Scholz, Doctoral Candidate, ERG, UCB Green Gold: The Science, Business, and Politics of Mining the World's Biological Riches for Novel Pharmaceuticals



## ERGies Abroad

**Chom Sangarasri Greacen** (ERG MS '99) and **Chris Sangarasri Greacen** (current ERG Ph.D. candidate) are living in Bangkok, Thailand and welcome traveling ERGies to visit and stay in their guest room. Chom is in the midst of Thailand's electricity restructuring, working with the Thai National Energy Policy Office. Electricity restructuring in Thailand may turn out just as ugly as in California as consumers' interests are not represented. There's ample opportunity for public-interest research on energy issues in Thailand. Chris is working on his Ph.D. on institutional issues in village-scale renewable energy. In early February 2001 he taught a 2-week course on renewable energy and appropriate technology to 25 village leaders in Burma. Chris co-authored a paper with Donna Green (ERG Ph.D. student) entitled "The role of bypass diodes in the failure of solar battery charging stations in Thailand" accepted for publication in *Solar Cells and Materials Journal* (Elsevier Press).

## Update on Andreas

**Andreas Weber**, who spent last year at ERG, is back in Germany completing his graduate studies. He will be done by September '01 - and "then it is really enough". Thanks to getting ahead on credits from coursework at ERG, he has found time to act and refresh his French. He is also in the process of preparing a student seminar for the spring term called Present and Future Energy Systems in Germany. In addition, his Interdisciplinary Environmental Engineering program won the competition for the best student web page in his state of Baden-Württemberg, so check out <http://www.uni-stuttgart.de/stg-umw>.

## Where's John-O ?

**John-O Niles** decided to take a semester off from the PhD program. He is writing grant applications and finishing up a few dangling odds and ends, including two books on climate change policy. He is also working with The Nature Conservancy to develop a long-term monitoring plan for the Blue Oak woodlands in northern California. His dissertation will most likely be in long-term forest conservation. He likes playing keyboards (an antique Fender Rhodes named 'Shep') and soccer. He spent several years in Nigeria and Cameroon, managing a primate conservation project.



## ERGies Storm the Hague, Fight for the Climate

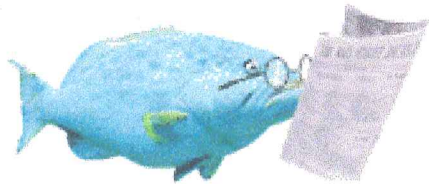
ERG was well-represented at the Sixth Conference of the Parties to the United Nations Framework Convention on Climate Change (COP6) held in The Hague, Netherlands in November, 2000. Attendees from ERG included **Paul Baer, Simone Pulver, Joanna Lewis, Nathan Hultman, Barbara Haya, John-O Niles, Tracey Osborne, and Antonia Herzog**. The ERGies kept busy with various political, activist, and research agendas. Simone spent the time pursuing her dissertation research by chasing down and interviewing oil company executives to get their perspective on the climate change issue. Nate's research led him to schmooze with execs from companies springing up around a newly emerging international market for carbon. Paul was there to remind all involved of the importance of not forgetting the equity principles underlying the whole climate debate, and to introduce his new environmental NGO, ECOEquity, to the international climate scene. Barbara, Joanna, and Antonia were busy assisting the Climate Action Network and ensuring that the importance of public participation not be forgotten in the various provisions of the Kyoto Protocol that involve developed nations investing in projects in developing nations to earn carbon credits. Tracey and John-O worked to ensure that the provisions of the Protocol that included forestry projects also included important forest conservation principles. All enjoyed giving Senators, Representatives and staffers an earful on the importance of looking past partisan biases and recognizing the urgency of redirecting our nation towards cleaner, more sustainable energy technologies. Many, many ERG alums were also present, representing non-profits, think-tanks, and governments. ERGies were also sure to eat well — an ERG student-alumni dinner was held the first week of the conference, and an ERG thanksgiving dinner was held the second week.



## Making WAVES: ERG Water Group

WAVES formed in the Fall of 1999 to bring together ERG students working on water-related research. ERG is an exciting place to study water because of the broad resources available at UC Berkeley and the freedom that ERG students have to pursue novel interdisciplinary projects. ERG students take advantage of faculty expertise in the fields of engineering, economics, ecology, environmental planning, geomorphology, hydrology, business, and law. UC Berkeley is also home to the Water Resources Center Archives, a unique library collection devoted entirely to water. Not confined to this campus, ERG students collaborate with researchers and professionals from around California and the world. While these diverse resources provide limitless opportunities for exploration, it's also nice to have a home base. WAVES provides this base, giving ERG students a group for discussion, networking, and mutual support.

To learn more about who WAVES is and what our individual research interests are, contact us by email at: [waveserg@socrates.berkeley.edu](mailto:waveserg@socrates.berkeley.edu)



## ERGies Start Working Group on Sustainability and the Private Sector

Two first-year ERG students are among the founders and coordinators of a new graduate student working group on "Globalization, Sustainability and the Role of the Private Sector." The group was selected for sponsorship by the MacArthur Program on Multilateral Governance at U.C. Berkeley's Institute for International Studies.

First-year ERGie Lisa Dreier decided to found the group after observing the vastly different discussions about corporate social responsibility that were occurring in the business and environmental programs on campus. "It seemed like the business students had the desire and tools to promote corporate social responsibility, but they didn't have a strong understanding of the scale and complexities of the environmental and social problems in question. The environmental students had an exhaustive understanding of the problems, but few tools to address them," she said.

Initial participants in the group include graduate students from a variety of disciplines, including environmental science, business, law, economics, geography, area studies, and journalism.

The working group will meet four times this spring to explore the role of America's private sector in achieving or detracting from environmental and social justice goals around the globe. The sessions will include guest speakers and extensive discussions. Topics of the four meetings have been roughly defined as: 1) Globalization and Sustainability: Boon or Bane? Differing perspectives on the environmental implications of worldwide growth in the private sector; 2) The Policy Context: multinational corporations' impact on the environment within the context of free trade agreements, privatization and increased foreign direct investment; 3) Alternatives to Regulation: Including (a) Reform from within: Voluntary agreements, targets and strategies by corporations to improve environmental and social performance; and (b) Externally-induced reform: The role of public pressure, especially in the globalized context; 4) Ethics, Accountability and Power: The different goals, responsibilities and accountability that corporations and governments have, and the implications of those differences with regard to ethics and social responsibility.

We encourage members of the ERG community to join our meetings and/or visit our website (<http://faculty.haas.berkeley.edu/toffel/workinggroup/>), which lists working group events, members, and relevant links & info. You can also contact the group's coordinators: Lisa Dreier (ERG and public policy, [lisad99@uclink.berkeley.edu](mailto:lisad99@uclink.berkeley.edu)), Garvin Heath (ERG,

## Climate Change Policy Journal Group

This semester we are having a weekly journal group to discuss recent developments in climate change science and policy. Meeting time: Wednesdays, 9AM  
Location: 251c Hillgard



# 2001 Master's Class Preview

## **The 2001 ERG Master's Class -** *A preview of Research Projects*

**JP Ross**    [jpross@socrates.berkeley.edu](mailto:jpross@socrates.berkeley.edu)

### **Diversification of R&D Portfolios, How to Bring Long-Term Research Into the Mix**

This project analyzes the Public Interest Energy Research Program administered by the California Energy Commission. To date funding has concentrated on late stage demonstration projects, possibly missing critical links in the R&D process. To further serve the public interest and the industry as a whole basic research, and the link between good ideas and early stage research, needs to be emphasized. We will also look at the policy research that needs to be done to break down barriers to entry of certain technologies on the verge of competitiveness.

**Mark Bolinger**    [bolinger@socrates.berkeley.edu](mailto:bolinger@socrates.berkeley.edu)

### **Community Financing of Wind Farms: Lessons from Europe and Applications for the United States**

This project focuses on the various business structures used for participatory ownership schemes in Denmark, Sweden, Germany, and the United Kingdom in an attempt to identify or create a workable model for the United States. The financial (and possibly legal) implications of each ownership model will be examined.

**Shannon Graham**

[shannong@socrates.berkeley.edu](mailto:shannong@socrates.berkeley.edu)

### **Is there a Market for Development and the Environment?**

This project is concerned with whether market mechanisms and the private sector can be used to reach development and environmental goals. More specifically, it will examine the potential benefits and risks associated with private sector provision of rural electrical service using household-level solar PV as an alternative to government extension of the national grid in developing countries. A central part of the analysis is a case study of the Photovoltaic Market Transformation Initiative (PVMTI) in Kenya, which is a project funded by the Global Environmental Facility and implemented by the International Finance Corporation of the World Bank Group. Experiences from other countries will be cited. An expected output of this work is a set of recommendations for policy makers, the private sector and local stakeholders.

**Jaquelin Cochran**    [jcochran@socrates](mailto:jcochran@socrates)

### **A Political and Anthropological Analysis of Rural Development in Cambodia**

This project will evaluate a rural development project from two perspectives: political science and anthropology, which take pro- and anti-state approaches, respectively. Using several villages in northeast Cambodia as a setting, how can international aid improve rural development to both avoid providing authority and resources to the state at the expense of the peasants, and allow nationals to command an increasing role in their development?

**Jennifer Mitchell-Jackson**

[jenmitch@socrates](mailto:jenmitch@socrates)

### **Energy Needs in an Internet Economy: A Closer Look at Data Centers**

Data centers, or facilities containing densely packed computer equipment to host websites, route emails and store data, are popping up along the nation's fiber optic backbones. These data centers are being designed to accommodate (and cool) loads of about 100 watts/square foot or more—upwards of 10 times the load of a commercial office building. In the Bay Area alone, these facilities are requesting an additional 200-300 MW per year, causing significant concern among utilities and those concerned with reducing energy consumption. There is clear evidence that many of these facilities have been overdesigned, and little or no data exist to support these requests for additional power. Jennifer is working with Jon Koomey from the Lawrence Berkeley National Lab (and also an ERG graduate) to investigate the energy consumption of data centers in an attempt to gain a better understanding of the energy needs

of the new internet economy. This project is part of a larger effort being conducted by LBL.

**Jon Servaites**    [jonser@socrates](mailto:jonser@socrates)

### **The Cost Impacts of Small-Scale Fuel Cell Policies**

The purpose of this project is to model some of the life-cycle cost implications of various policies for small-scale fuel cell systems. This analysis is showing how fuel cell economics are greatly affected by such policies and how appropriate policies can allow fuel cell manufacturers to produce their systems in a significantly more cost-effective manner. Jon is working with Dan Kammen and Tim Lipman (Post-doc student, RAEL).



# 2001 Master's Class

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**Eric Cutter** cutter@haas.berkeley.edu

## **Implementing Water Wheeling Policy in California**

This project aims to apply lessons from the natural gas and electric industry restructurings to promote more active water markets and water wheeling in California.

**Joanna Lewis** joanna@socrates

## **The Political and Economic Implications of Implementing Renewable Energy Policies in China**

This project explores several renewable energy policy options that the Chinese government is currently considering, focusing on a Renewable Portfolio Standard (RPS) and how such a policy could effectively be implemented in the political and economic context of China's transitioning economy.

**Hannah Friedman** hannahf@socrates

## **Characterization of Diagnostic Tools for Commercial HVAC Systems**

Hannah is analyzing software tools to diagnose energy waste in large building heating, ventilating, and air conditioning systems. This project compares the features, examines the strengths of each tool, and highlights needs for further development. This project is a part of Hannah's work at LBL in building commissioning and diagnostics and is funded by the CEC PIER program.

**Elisa Derby** ederby@socrates

## **Appliance Efficiency Standards in Costa Rica**

This project examines the status of the Costa Rican implementation of a US-based appliance efficiency standard and the challenges it faces in achieving energy conservation, including compliance verification and enforcement mechanisms.

**Amar Mann** amann2@socrates

Another water project.

**Barbara Haya** barbarak@socrates

## **Recommendations for Public Participation Procedures in the Clean Development Mechanism**

Barbara's research attempts to answer how public participation procedures can be incorporated into the rules of the Clean Development Mechanism to effectively reduce the potential negative effects of these projects.

## **ERGies Unite!**

### **A Pilot Program for Mentoring**

In response to a "feeler" that we sent out in the last issue of *Life on ERG* six ERG alumni expressed interest in becoming mentors for current ERG students. An informal e-mail poll of ERG students confirmed our suspicion that many ERG students, mostly at the master's level, would be interested in having a mentor. We are thrilled at the responses from both sides and have decided to initiate a pilot program that will link together interested mentors and mentees.

We were motivated to initiate this pilot program based on our belief that there is substantial "inter-generational" knowledge that can be shared to help current students chart their professional careers. ERGies that work in diverse and exciting fields have valuable experiences and insights that can be extremely useful to current students. As a Switzer Fellow, I know that the mentor program is one of the most valuable parts of the scholarship. I have enjoyed building a relationship with a professional who challenges me and helps me strategize about a range of possible career paths that are difficult for me to conceptualize while immersed in class work.

Additionally, we are excited about strengthening the ERG network. Through the mentoring program, we would like to facilitate a more active and accessible communication between past and current ERGies. A more active network can only lead to exciting and unexpected opportunities.

This semester Hannah and I will work to coordinate mentor relationships between current students and the list of interested mentors we currently have (more welcome!). We will report back in the next issue of *Life on ERG*, hopefully with ideas of how to institutionalize a mentoring program at ERG.

**Please send any comments  
or let us know you are interested!**

-- Shannon Graham shannong@socrates.berkeley.edu



## Bruce Nordman (MA, 1990)

[BNordman@lbl.gov](mailto:BNordman@lbl.gov)

(510) 486-7089

I've been in Berkeley and at Lawrence Berkeley National Laboratory since finishing up at ERG in 1990. Since 1995 I've focused on office equipment energy efficiency, mostly on electricity use and savings, but partly on paper use. My current project is to try to standardize how we interact with office equipment (and ultimately any electronic device) with respect to its power status. See <http://eetd.LBL.gov/Controls> for more info on that. Teresa and I (we got hitched in 1998) are adding on to our house which is fun, challenging, and sometimes frustrating.

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## Doron Amiran (MA, 1991)

[doron@zapworld.com](mailto:doron@zapworld.com)

(707) 824-4150

x206

My focus at ERG was on waste management and particularly behavioral changes that could reduce individual environmental impacts. I worked 5 years in the Alameda County Home Composting Program, where I became known as Mr. Wiggle E. Worm. Tired of being referred to as an invertebrate, I chucked it all and left on a round the world soul search. Played guitar and rode motorbikes through Thailand, Vietnam, Cambodia and India, and completed Magellanesque circumnavigation through Israel, Egypt, ferries to Greece and trains through Europe. I spent 2 full years on the road. I returned to Sonoma County and hooked up with ZAP, local manufacturer of electric bikes and scooters. Became Government Affairs Manager, shuttling between Sebastopol, Sacramento and Washington DC. I wrote successful grants, helped to pass a California State law legalizing scooters, pushed a Federal bill through the House. I was recently promoted to International Business Development Manager, responsible for developing ZAP markets overseas, travelling to Costa Rica, Indonesia, and soon to Italy, India and China.

## Penn Loh (MS, 1994)

[Penn@ace-ej.org](mailto:Penn@ace-ej.org)

617 442-3343 x24

Much has happened since finishing ERG in 1994. Aside from deciding not to pursue a doctorate, moving back East to Boston, and getting married (to Jackie Cefola), I have been involved with an environmental justice organization called **Alternatives for Community & Environment (ACE)**. It's been the most rewarding work experience of my life, effectively joining together my professional training with my commitment to social justice. ACE ([www.ace-ej.org](http://www.ace-ej.org)) is now one of the premiere regional environmental justice organizations in the country. Based in Roxbury (a low income community of color in Boston) and with a diverse and talented staff of 10, we provide legal and technical support to community groups, leadership development programs for youth, and coordinate grassroots networks around environmental and transportation justice.

When I started in 1996, I was the Research & Development Director (i.e. fundraiser and all-around utility guy). Within a few years, I became Associate Director and for the last year-and-a-half have been serving as the Executive Director. I also serve on the Boards of the Environmental Support Center and the newly launched Environmental Leadership Program. This was a place I would have never imagined myself to be when at ERG. But the opportunity I had at ERG to explore new frameworks and learn new tools with an incredible set of people set me on the path that I am now on. Though not always in agreement with the frameworks being taught, the chance to challenge them was one of the most valuable parts of my ERG experience. Anyone in Boston or visiting should look me up.

## Jon Koomey (Ph.D., 1990)

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(510) 486-5974

I worked at Lawrence Berkeley National Lab (LBNL) as an ERG student, and continued on at LBNL, first as a post-doc, then a Staff Scientist. Amazingly enough, I have had the same work phone number since 1984! Soon after I become a Staff Scientist, I co-founded the End-Use Forecasting Group, and I remain the leader of this group.

LBNL is an ideal place for me to work. My research is interdisciplinary to the core, drawing upon economics, public policy, engineering, and environmental science. My group focuses on three main areas: support of the EPA's ENERGY STAR programs, characterizing technologies to improve the efficiency of energy use, and utilizing such data to conduct policy studies of the costs of reducing carbon emissions. Most recently, I've been enmeshed in debunking various absurd claims that information technology is responsible for the California power crisis (see <http://n4e.lbl.gov>). Because of the flurry of recent interest, this last project has given me the opportunity to become experienced in dealing with the media.

In ERG, I learned some important lessons:

- 1) Fast, accurate, and systematically documented calculations come in handy all the time, so do 'em often and do 'em right. Urban legends become conventional wisdom all the time, and it takes systematic thinking to debunk them.
- 2) There is a social dimension to interdisciplinary work that is distinct from the substantive aspects of the research. Interdisciplinary work is akin to translators attempting to foster communication between people from different cultures who speak different languages and haven't got a clue how to talk to each other.
- 3) Don't overwork for the planet. One of my favorite quotes is from the environmentalist Edward Abbey: "Do not burn yourself out. Be as I am—a reluctant enthusiast, a part-time crusader, a half-hearted fanatic. Save the other half of yourselves and your lives for pleasure."

I interact with ERG students regularly. In Spring 2000, I coordinated "Tricks of the Trade" and I used "Tricks" to field test my new book, *Turning Numbers into Knowledge: Mastering the Art of Problem Solving* (Analytics Press, 2001; For more info or to order go to <http://www.numbersintoknowledge.com>). I am currently working with Jenn Mitchell-Jackson analyzing the energy used by server farms and other aspects of the information economy, and I expect to serve on Nate Hultman's orals committee in May 2001. I learn a lot interacting with ERG students, and it's always fun, so I anticipate doing more work with ERGies in the years ahead.

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## Jeff Stein (MS 1997)

[jstein@taylor-engineering.com](mailto:jstein@taylor-engineering.com)

Jeff has worked in the field of energy efficiency consulting for buildings since he graduated from ERG in 1997. He first spent time designing mechanical systems at a design/build firm and then transferred to Eley Associates in San Francisco, where he developed software and ran building energy simulations. For almost a year, Jeff has been working in Alameda at a top HVAC design firm, Taylor Engineering. His current work involves energy efficient design and analysis for buildings, including life cycle cost analysis of designs.



# Faculty News

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## Dan Kammen

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Over the past few months Dan Kammen and the students and post-doctoral fellows have continued on a number of research avenues. Check out the RAEL website for links to each of the following projects: <http://socrates.berkeley.edu/~rael/>

- ⊙ ERG and Renewable and Appropriate Energy Laboratory (RAEL) graduate student J. P. Ross led a discovery tour where a Sixth Grade class from West Lake School learned about renewable energy.
- ⊙ Developing markets for clean energy technologies in developing nations.
- ⊙ Large-scale use of biomass waste for energy in Zimbabwe.
- ⊙ Biomass Combustion and Health Issues in Developing Nations.
- ⊙ Equity and the International Climate Negotiations, including a paper in *Science*.
- ⊙ Fuel Cell Vehicles as the Basis for a Distributed Generation Resource in California.

Recent papers have appeared from the group in: *Energy Policy*, *Science*, and *World Development*. Kammen has recently spoken at: Yale University, The Energy Foundation, Stanford University, Harvard University, San Jose State University, and The World Bank (Village Power 2000). Kammen is serving on the U. S. Department of Energy's Nuclear Energy Research Committee (NERAC IV) and is examining issues with a proposed next generation of nuclear reactors (Generation IV). Dan was recently named an Aldo Leopold Environmental Leadership Fellow for 2001. Recently Kammen has been engaged in the public information campaign and policy discussions over the California energy crisis and the failure of policy leadership to advance the use of renewable energy and energy efficiency options. He has recently been featured on NPR (*Living on Earth*), *Voice of America* radio, CNN and BayTV, and in *The San Francisco Chronicle*, *The New York Times*, *The San Jose Business Review*, *The Daily Californian*, *The Sacramento Bee*, *USA Today*, among others. Transcripts, audio files, and other information on these appearances can be found at: <http://socrates.berkeley.edu/~rael/interviews>

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## Dick Norgaard

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Dick Norgaard has been appointed to the Science Advisory Board of the U.S. EPA to work with its environmental economics committee. As President (1998-2001) of the International Society for Ecological Economics, he serves with other representatives of biological societies on the Council of the American Institute of Biological Sciences (AIBS). The Council members have now elected him to represent them on the Board of AIBS. He continues to serve on the Board of Redefining Progress and is helping in the start up of EcoEquity, a new NGO being co-founded by ERG student Paul Baer and Tom Athanasiou.

His research currently centers around a formal model of the spatial and governance controversies in the trade and environment debate. This semester's course on energy economics, surprise, surprise, is focusing on California's electricity and natural gas crisis.





## New NGO Founded: EcoEquity

This fall, students and faculty from ERG helped found a new NGO focused on climate justice. The group, called EcoEquity, will specifically advocate for a post-Kyoto climate treaty based on convergence to equal per capita rights to the atmosphere. ERG PhD Student

Paul Baer and local environmental author Tom Athanasiou are coordinators of the new group; students Barbara Haya and Donna Green and professors Dick Norgaard and Dan Kammen are also members of the organizing committee, along with local environmental leaders from the International Rivers Network, Project Underground, and ICLEI (The International Council for Local Environmental Initiatives). The new group is an outgrowth of the work that resulted in an article in *Science* last September advocating equal per capita emissions rights (Baer et al., 2000. *Equity and Greenhouse Gas Responsibility in Climate Policy. Science*, 289:2287).

Baer, Athanasiou and Haya, along with several other ERG students, attended COP6 in The Hague in November, in part to introduce EcoEquity. EcoEquity is the first US environmental organization to take a strong public stand in favor of equal per capita rights, and was welcomed by long-time equity activists such as India's Center for Science and the Environment and the Global Commons Institute from the UK. EcoEquity helped organize an "equity caucus" to begin a more coordinated international strategy for equity-focused climate activism.

There was a substantial discussion of equity at various "side events" organized by NGOs, including an excellent panel by *Redefining Progress* (of which Norgaard was a founder) with a focus on domestic environmental justice related to climate change mitigation and adaptation. Since the COP, EcoEquity has given a local report on the equity "buzz" in The Hague, and published the first issue of an electronic newsletter, the "Climate Equity Observer." The first issue, which contains a discussion of the group's mission and a written report on the COP, was published in January and can be obtained by emailing [ceo@ecoequity.org](mailto:ceo@ecoequity.org). The newsletter has been extremely well received so far.

In the coming months, EcoEquity will be incorporating, beginning its fundraising efforts, and of course building a web site.

In addition, Baer has been writing a chapter on the ethics of climate equity for an undergraduate reader on climate change policy (edited by ERG PhD student John-O Niles, together with Steve Schneider and Armin Rosencranz), while Athanasiou and ERG PhD student Nate Hultman are preparing an article on the "realist" (practical) arguments for equal per capita emissions rights. The group also intends to make a strong presence at a conference on climate equity sponsored by the Pew Center this April ([www.pewclimate.org](http://www.pewclimate.org)). For more information, contact Paul or Tom ([pbaer@ecoequity.org](mailto:pbaer@ecoequity.org), [toma@ecoequity.org](mailto:toma@ecoequity.org)).



Check out the Environmental Technology Center at Sonoma State, nearing completion! Sascha Von Meier's most recent endeavor. <http://www.sonoma.edu/ensp/etc/>



## Kitchen Ranges

Older gas ranges feature up to three pilot lights, one for the oven and two serving the four burners. [Since the mid-1980s gas ranges in the U.S. have generally been equipped with piezo electric igniters instead.] **The sole function of these pilot lights is to save you the trouble of lighting the burners yourself.** Eliminating the two pilots supplying the burners is very straightforward, and, depending on your peculiar habits, may involve additional non-energy benefits (reduced risk of burning yourself by accidentally touching the stovetop above the invisible and thus easily forgotten pilot flames), or costs (loss of convenient 24h drying space for cast iron pots).

If you wish to pursue the energy benefits you must:

1. Remove the black metal spiders which tend to rest over each burner orifice.
2. Remove the enamel stove top by tilting the front edge up approximately 45 degrees at which point you can pull it away from the two pins it rests on at the back (toward yourself an inch or so). Place it out of your way on a counter or like surface. Although most ranges still in use should come apart in this way your range may require additional dismantling such as removing a few screws.
3. Locate the two very thin (often silver-gray colored aluminum) gas lines which terminate at the pilot flames. Where these thin lines branch off from the main (much thicker) gas line you should find set-screws.
4. With a fairly small flat-head screw-driver you should be able to turn these set screws clockwise a few turns. If you are turning the correct screws the pilot flames should promptly go out.

### **Re-lighting your Pilotless Burners:**

So as to still be in a position to cook food you will need to purchase or otherwise secure a striker or lighter. Matches can work in a pinch but I wouldn't recommend them for this task. Butane lighters may seem easier to use, but this is a bit silly since gas is already present in sufficient quantities and you really only want a spark to ignite the main burner when you turn the knob. Local hardware stores have excellent strikers for sale. The kind you remember from your chemistry lab are, in my opinion, the best, and if you are lucky you will find the kind with a replaceable rotating head which allows you to switch out the flint without having to throw away the whole striker when the flint is used up. [cost: \$3-7]

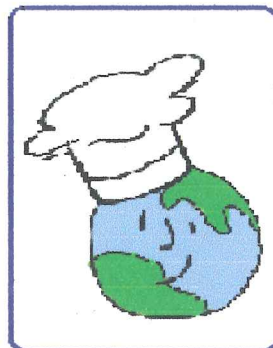
Although eliminating the oven pilot flame is possible, in my experience most people would not find the procedure simple.

### **Savings:**

- A space heater pilot flame can consume as much as 600 cu. ft. of gas per month which amounts to \$3.50 -\$11.00.
- Eliminating a pair of range-top pilot flames of the kind described would yield a monthly savings of 300-400 cu. ft. of gas or \$2.00-\$6.00, depending on flame size and gas price.

In case you suspect me to exaggerate the savings potential, à la Amory Lovins, let me assure you I do not: An apartment here in Berkeley I metered for a week while it was unoccupied burned through 55 cubic feet of gas per day with just five pilot flames (I made sure no appliance was actually on). At current gas prices\* that amounts to \$30.95/month. For comparison, in an identically equipped apartment (avg. age of gas appliances: 35 yrs.) It has been possible to supply the year round average cooking, space- and water heating needs of two adults with 22 cubic feet per day, or 60% less than *the standby losses* just mentioned. With a smaller water heater and a bit of wall and attic insulation I figure it should be possible to cut that in half again.

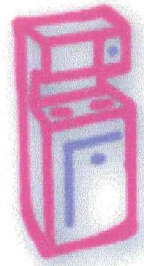
\*including utility tax





## How to Persuade your Gas Appliances to Stop Snacking Between Meals

Saving Energy Without  
Buying New Products #2  
by Reuben Deumling



Just in the past nine months the local price of natural gas has jumped from about \$0.63/therm (100 cubic feet) to \$1.72/therm! What follows is a description of inexpensive measures to reduce your household consumption of natural gas which have now become lucrative besides saving energy. A few of the most common ways to conserve natural gas involve insulating your house, water heater or hot water pipes; choosing to heat less either through setting the thermostat lower or by turning the heat on infrequently and wearing warm clothes; and by modulating the use of hot water (the subject of a future article). Some of these techniques are thought more appropriate if you own your place of residence. As this is partially true, and because many readers of this newsletter are renters, I am going to focus on a less well known but quite simple and all-but-free strategy: **turning off pilot lights when they are not needed.** This was raised in Congressional Hearings in the early 1970s, but has been all but forgotten since.

Pilot lights use a considerable amount of gas, and in many instances are much like the standby losses on electronic equipment discussed in the last issue. Upon request, PG&E dispatches technicians to turn some of these flames off (and back on) for you—but you can do it yourself. Although domestic water heaters are among the largest users of natural gas in households, and they too have pilot lights, I want to focus today on space heaters and kitchen ranges.

### Space Heaters

Virtually all natural gas space heaters have a standing pilot light. Knowing how to turn it on and off yourself allows you to eliminate it whenever no heating is desired. To turn it off you must locate a circular knob with several settings. The increments should read “pilot,” “on” and “off.” To extinguish a pilot flame as the PG&E employee would, simply locate this knob (usually by either removing a panel that is snapped in place or by sliding open a little window) and **turn the knob from “on” to “off.” It is that easy.** The more familiar you become with this, the more often you may elect to do it. [cost: \$0].

You probably will want to be able to turn it back on as well. To do this, ready yourself with a match (or two—this sometimes takes a few tries). The procedure can vary a bit from model to model, but this is the general approach:

1. light the match.
2. turn the knob to “pilot,” depress the knob in that position and, while holding it down with one hand, light the soon-to-be pilot flame with the other. This sounds trickier than it is.
3. Having successfully lit the pilot flame, keep holding the knob down for 30 seconds to a minute, or whatever the little instruction sticker in front of you exhorts you to do. The flame should remain lit after you release the knob. If this is the case turn the knob to “on” and set the thermostat to whatever level you like.

Fancier newer space heater models feature a piezo-electric start in addition to the pilot flame, which makes the re-lighting process much easier and thus more easily repeated when no heating is needed for shorter intervals (when going away for the weekend, etc.) With such an igniter, you can skip all the above steps involving matches, depressing the bright red igniter button instead. It is possible to retrofit such a device [\$13-25] to any gas appliance with a pilot light, though it will make more financial and energy sense in some cases than in others. More on this when we talk about water heaters in an upcoming issue.