

Making a Mark on Policy

During his freshman year in college, Mark Cohen was aiming at a career in foreign affairs when he bumped into William Proxmire, the legendary and feisty Wisconsin senator, who took him on as an intern. The experience quickly turned Cohen into a classic Hill rat, infatuated with the ways that ideas could influence domestic policy formation.

Cohen, recently named vice president for research at RFF, found himself drawn toward work that combined the rigor and rationality of economics with the practical demands of effective governance.

"I am unapologetically a policy maven," says Cohen, who previously was a professor at Vanderbilt University's Owen Graduate School of Management and co-founder of the Vanderbilt Center for Environmental Management Studies. "Academic findings are invaluable, but they need to be injected purposefully into the policy process."

At RFF, Cohen will assume a newly created position that will oversee all research programs and guide efforts to align RFF's mission with current environmental, energy, and natural resource policy issues. He also will serve on the RFF management committee.

"Mark emerged as the top candidate after a lengthy search to fill an important new leadership position," said RFF President Phil Sharp in announcing the appointment. "He has a demonstrated ability to affect institutional change in an academic setting and to nurture program development. Moreover, he has a strategic mindset that recognizes the vital role of individual, entrepreneurial scholars in policy-oriented research."

Cohen was at Vanderbilt in various positions since 1986, including departmental chair and senior associate dean of the Owen School. He also held a secondary appointment as professor of law at Vanderbilt. He recently taught graduate-level courses for business and law students on "Corporate Strategies for Environmental and Social Responsibility" and "The Law and Business of Climate Change."

After graduating from Georgetown University in 1978, Cohen worked for two years as a staff economist at the Environmental Protec-



tion Agency. "As a young staff analyst, I was surprised to learn that enforcement issues were largely an afterthought when developing environmental regulations. It became clear to me that if regulations were to be effective, enforcement issues needed to be studied with rigorous economic and policy analysis just like the regulatory policies themselves," he says. "So, I decided to focus on applying economic tools to environmental enforcement when I went back to school to go for a doctorate in economics. I not only enjoyed the rational approach that economics offers, but the academic world provided a lot of stimulating challenges." In 1985, he received his Ph.D. from Carnegie Mellon University's Graduate School of Industrial Administration.

Cohen returned to Washington to work at the Federal Trade Commission, and then began what he jokingly terms a "life of crime." He moved to the U.S. Sentencing Commission and helped bring economic and benefit-cost analysis to criminal justice policy. Over his career, in addition to his work on environmental monitoring and enforcement, he has published dozens of papers and articles on crime-related topics, including corrections policy, corporate

malfeasance, and willingness to pay for crime control programs. Some of that work even focused on environmental crimes—meshing his background in environmental enforcement and crime policy.

In addition to focusing on environmental enforcement policy, he has published on a wide variety of topics including the role of environmental regulation on innovation, and the effect of mandatory disclosure programs on firm behavior. He also is a recognized authority on sustainability reporting guidelines, which

are standardized measures used by organizations to communicate their economic, environmental, and social performance and to measure their impact on sustainable development. He currently is on the management committee of

the Stakeholder Council of the Global Reporting Initiative. This international organization provides guidance for corporations and nonprofits to use in disclosing their sustainability performance, and also provides stakeholders a universally applicable, comparable framework in which to understand disclosed information.

Over the years, Cohen has maintained a close association with several RFF researchers, including former RFF President Paul Portney and Senior Fellow Jim Boyd, and he often cites the work of Senior Fellows Winston Harrington, Alan Krupnick, and Karen Palmer, among others. He holds a deep respect for RFF's policy work.

In accepting the new position, Cohen said, "I believe that transparency, communication, and inclusiveness are key ingredients to managing an engaged research team. I look forward to using my experience as a researcher, academic entrepreneur, and administrator to expand RFF's exemplary reputation and to gain broader international recognition."

Cohen and his wife Robin have one daughter, who is a senior at the University of Pennsylvania's Wharton School. Among his outside interests, he is an avid art collector and a practitioner of yoga. ■

Dedicated to Nature—and Nonprofits



A love of the outdoors and a personal commitment to conserva-

tion of natural resources led Lea Harvey to a career in nonprofit management—with a particular bent toward environmental policy.

Recently named vice president of development at RFF, Harvey brings to that role years of experience as a fundraising executive for leading environmental and nonprofit governing organizations.

RFF President Phil Sharp noted that Harvey's proven abilities in solicitation and stewardship of financial resources for nonprofit groups were exemplary qualifications for her new position. "Lea affords us a demonstrated enthusiasm for nonprofit development and a solid background in environmental issues," said Sharp. "She understands our mission and will add significant value to our management team and to our fundraising operation."

Growing up in a small town in coastal South Carolina, Harvey spent much of her time outdoors and, in her words, "was enthralled with the natural world." She continues to set aside time for bicycling, hiking in the mountains, canoeing in wilderness areas, and finding the best fly-fishing spots.

After graduating from Sweet Briar College in Virginia with a degree in art history and minor in nonprofit management, Harvey came to Washington assuming she would explore work in museums. "I soon learned that my heart was in organizations that made a positive difference in the quality of people's lives," she says. "Before long, I was ensconced in the world of nonprofits and the environment."

From 1998 to 2005, she worked in several key positions at the World Wildlife Fund, an

international conservation organization. As director of foundation and corporate relations, she led a staff of six to build a \$14.5 million foundation and corporate fundraising program. She also focused on building partnerships with foundation and corporate grant-makers to advance conservation and sustainability initiatives in the United States, Africa, Asia, and Latin America.

Most recently, until she joined RFF, Harvey was vice president of development at Board-Source, a Washington-based publishing and consulting organization dedicated to strengthening nonprofits of all sizes and mission types by strengthening the boards that lead them.

"Our mandate was to help nonprofit boards of directors and chief executives to become the most strategic and effective leaders they could be," she says. "That involves an intense focus on mission, candid evaluation of successes and failures, and strategic planning that pays off in better results. It gave me invaluable insights into how good nonprofits work, and how others may falter."

Kathryn Fuller, a member of the RFF Board and former president and CEO of the World Wildlife Fund, noted that Harvey's skills in nonprofit management and development would be major assets in her new position. "Lea has a wonderful personal style and a keen intelligence, and she attracts genuine respect from her colleagues," says Fuller. "And to be sure, she's a producer of good results." ■

Meeting Future Energy Needs in the Context of Global Climate Change

Raymond J. Kopp

In June, Senior Fellow Ray Kopp, director of RFF's Climate Policy Program, testified before the Senate Energy and Natural Resources Committee on meeting increased global energy demands in the context of addressing global climate change. This article is based on his full testimony.

In order to meet a carbon dioxide (CO₂) concentration target of 450 parts per million, the widely agreed-upon number for stabilizing the rate of global climate change, sobering economic challenges lie ahead in terms of the investments needed for research, development, and demonstration (RD&D) and physical capital but the technology path itself is feasible.

A good deal of our collective understanding of the challenges posed by climate change is reflected in the recent International Energy Agency's (IEA) report, *Energy Technology Perspectives 2008: Scenarios and Strategies to 2050*. (Kopp was asked to summarize the report's findings.) Most importantly, there is no silver bullet. In addition to conservation, virtually all commercially available low-carbon technologies and those that will become available over the next few decades must be deployed.

Two things will have to happen if substantial progress is to be made. Carbon pricing will be crucial to providing sufficient incentives for both conservation and technology development and deployment. And governments will be required to greatly enhance spending on RD&D and to ensure the efficiency and efficacy of that spending. But the biggest hurdle is likely to be building up sufficient momentum—time is not on our side, for two key reasons.

Global demand for energy continues to rise, and the bulk of that increase will come from non-OECD (Organisation for Economic Co-operation and Development) countries. Correspondingly, the necessary investments in energy-producing and -consuming technologies must take place there as well, although new low- and no-carbon energy sources (such as nuclear and renewables) will be more costly than conventional sources. In OECD countries, we may be willing to bear higher carbon prices but non-OECD countries are already hard-pressed to afford current fossil fuel technology, much less subsidize low- and no-carbon energy sources.

Investing in RD&D, conservation, and physical, energy-related capital must begin immediately. Any delay means greater atmospheric concentrations in the coming years. Unfortunately, we cannot wave a magic wand and will this process to commence. Rather, we must follow a slow and arduous path to develop and implement the many public policies, domestic and international, that will remove barriers and enable investment.

We must buy some badly needed time and, fortunately, we have a very good option, namely the 15 to 20 percent of global CO₂ emissions that come from deforestation in tropical countries. While it is now widely known that China and the United States are the two largest CO₂ emitters, the next two are Brazil and Indonesia, due to widespread deforestation.

Reducing CO₂ emissions by reducing deforestation can be accomplished with targeted domestic policies that alter the economics of land use to make a standing forest more valuable than alternative uses of the land. Using the growing international carbon market and the nascent U.S. market to monetize the carbon contained in standing forests will provide the economic incentives needed to alter land-use decisions.

In principle, such land-use decisions could be changed very quickly, giving rise to rapid reductions in CO₂ emissions. These large-scale reductions in forest-related CO₂ are sure to become ever more valuable in light of the hard work ahead to achieve the needed fossil-based reductions in the decades ahead. ■

An Overview of the Economic Benefits of Cooperatives and Individual Fishing Quota Systems

James N. Sanchirico

In July, *RFF University Fellow James Sanchirico testified before the U.S. Senate Committee on Commerce, Science, and Transportation Subcommittee for Oceans, Atmosphere, Fisheries, and Coast Guard. This article is based on his full testimony, which is available on our website.*

The marine species residing in U.S. territorial waters and the men and women who make their livelihood from them are at a critical juncture. Without secure access to the resource, individual "fishers" compete with each other to capture as much of it as possible.

Cooperating under so-called rule of capture incentives, whereby the catch is not owned until onboard a vessel, results in a competition for fish that leads to low wages, dangerous

working conditions, low-valued products, excess harvesting and fish processing capacity, and ever-shorter fishing seasons. Economically depressed fisheries are vulnerable to short-term thinking and risk-taking, and fishery participants cannot afford to invest in long-term sustainability.

This outcome is in nobody's best interest. In other words, it's a classic tragedy of the commons.

These conditions are not fated, however. Policies that address the rule of capture incentives include fishing cooperatives and individual fishing quota systems (IFQs). In each policy, the allocation of catch shares reduces the incentives to invest in the "race for fish." Participants have a greater certainty about their catch levels and the ability to buy and sell shares provides flexibility for



participants to adjust the scale of their operations.

Around the world, fisheries managed with IFQs or cooperatives experience sustainable profit rates that range from 20 to 60 percent. These overall economic benefits are indicative of both cost savings and revenue increases. They derive from ownership of the catch shares and the ability to transfer the shares from one fishing participant to another.

Benefits from ownership include the reduced incentive to race for fish, which results in longer fishing seasons and a slower pace of fishing. The slowed pace improves the ability of vessels to optimize on-board processing facilities, resulting in increases in the amount of product sold on the market per pound of fish caught. Essentially, the incentives shift from maximizing the quantity of fish caught to maximizing the value of the catch.

Additional benefits can be gained from the transferability of the catch shares. Typically, fisheries managed under an IFQ system see a reduced number of vessels as excess capacity is removed from the fishery, and participants utilize the additional flexibility to determine the optimal scale of their operations. Higher-cost (and thus less-efficient) vessels will find it more profitable to sell or trade their shares than to fish them, and so the total allowable catch will be caught at the lowest possible cost.

One of the most powerful forces of change created by catch-share programs is a constituency whose wealth is a function of the health of the marine environment. Wealth creation, in turn, can lead to improved stewardship, sustainability, and further innovation to increase value. ■

Taking a Closer Look at the Cost of Air and Water Pollution in China

Sandra A. Hoffmann

In recent months, the press has been filled with stories of the extraordinary efforts the Chinese government made to assure that environmental conditions met world approval during the 2008 Olympics. Earlier this summer, the city of Qingdao mobilized thousands of people to clean up an algal bloom that choked the coastline and threatened Olympic sailing competitions. In Beijing and neighboring cities, factories were closed to a surrounding distance of 300 kilometers. In Beijing itself, government vehicle traffic was cut by 70 percent and private vehicles were already put under an alternate driving-day restriction, two moves that were expected to reduce 40 percent of the 3.3 million vehicles on its streets. Such unparalleled actions paid off—at least temporarily: the air over Beijing cleared a few days before the Olympic opening day.

But, of course, the real impact of pollution in China has less to do with the Olympics than with the sustained exposure that the Chinese population faces. China's remarkable economic growth over the past 25 years, spurred by massive industrialization, has had severe environmental consequences. Fine particulate levels (PM 10) in major Chinese cities are roughly twice World Health Organization guidelines and three to four times those typically seen in U.S. or European cities. In meeting rising energy demands, China has become the world's largest emitter of sulfur dioxide. Water supply and quality, which are strongly affected by both industrial pollution and bio-

logical waste, have been a focus of public concern in the past few years.

China has made strides toward implementation of more effective environmental quality management. Significant progress was made during the 1980s and 1990s, but those advances have slowed in the past decade. For example, energy efficiency—which increased markedly from 7.5 tons of coal per 10,000

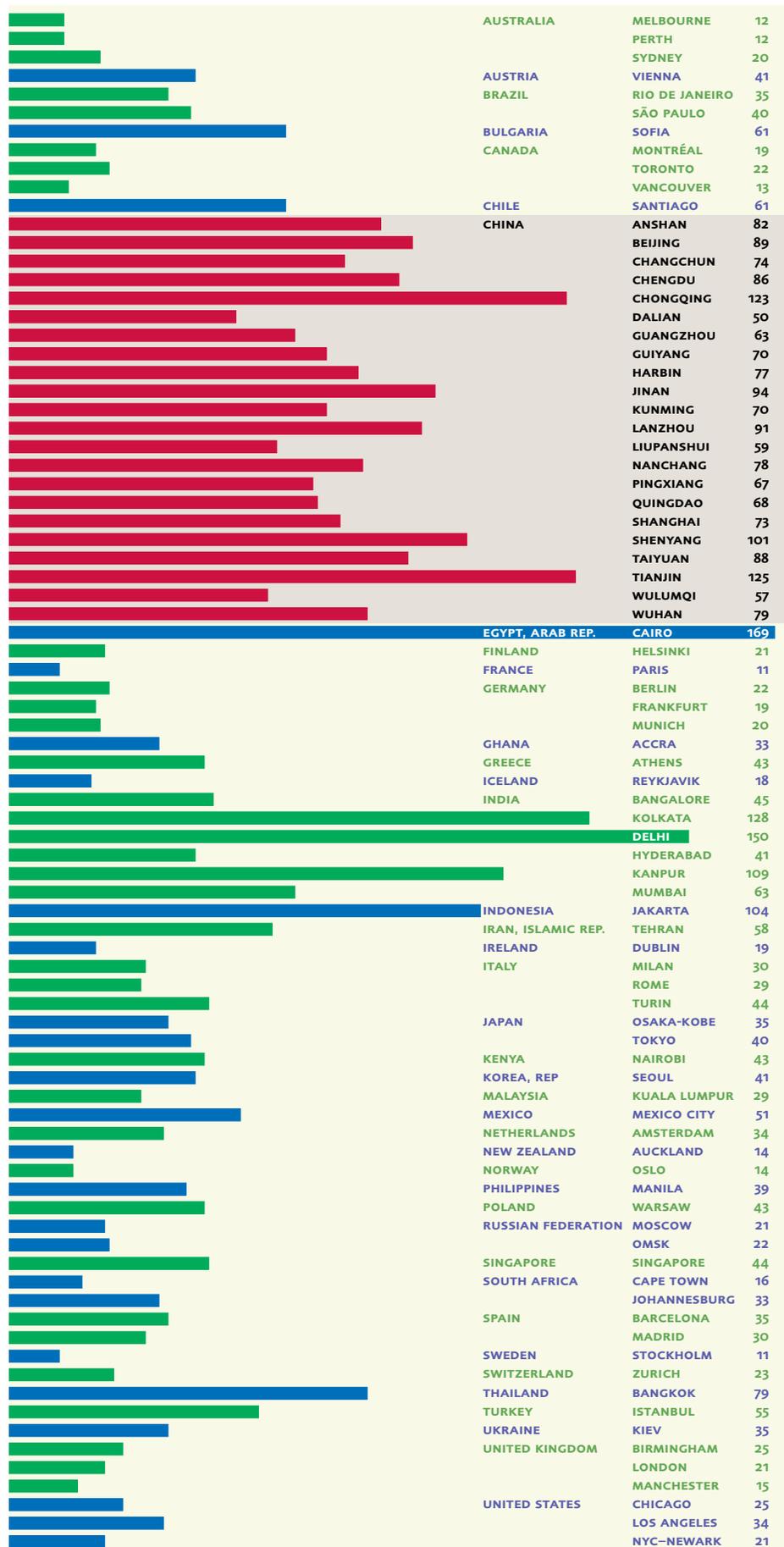
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yuan of GDP in the 1980s to roughly 2.5 tons in the late 1990s—has stagnated since then. Likewise, urban air quality improved in the 1980s and 1990s but has

stalled in the past decade, due in no small part to the rise in car ownership, up 31 percent between 1990 and 2003.

Despite this gloomy recent performance, China is in a good position to move more aggressively to address these environmental quality problems. Rapid industrialization has provided the financial resources to take advantage not only of modern pollution control technologies but also decades of experience throughout the world with designing more effective pollution control policies. The challenge ahead is finding means of efficiently controlling pollution without unduly slowing the economic growth that lifted an estimated 400 million people above the extreme poverty line between 1980 and 2000.

Efficient pollution policy requires information. RFF Senior Fellow Alan Krupnick and I are working with a team of scientists and economists from the World Bank, Norway, and China to model the health and productivity



Left: Average annual PM10 concentrations observed in selected cities worldwide, 2004–05. Despite higher counts found in larger capitals, China's cities lead the world in overall levels of pollutants.

Source: World Bank Indicators, 2005

impacts of air and water pollution in China. The model is national in scope and regional in detail. It both provides a baseline picture of pollution impacts and builds China's capacity to assess the effectiveness of pollution control efforts. By combining Chinese ambient monitoring data with international and locally estimated dose-response functions, the model makes it possible for China to evaluate changes in the impacts of pollution on human health, agriculture, fisheries, and physical infrastructure over time. By valuing impacts in monetary terms, it also provides a means of comparing otherwise incommensurable alternatives.

As part of this project, we conducted some of the first surveys in China estimating people's willingness to pay for reductions in their risks of death associated with air pollution. This international collaboration marks a significant step toward developing a green accounting system and the essential information infrastructure for efficient pollution control in China. ■

U.S. Greenhouse Gas Emissions Reductions: What are the Opportunities, At What Price, and Through What Policies?

The same day that the U.S. Senate embarked on what RFF President Phil Sharp referred to as “a heavy-duty debate” on the Lieberman-Warner bill, a capacity crowd gathered at RFF to listen to a related debate sparked by the recently released McKinsey & Company report, *Reducing U.S. Greenhouse Gas Emissions: How Much at What Cost?*.

At a time when scientists are calling for dramatic reductions in emissions, government forecasts predict a 35 percent increase by 2030 if the current trend prevails. And if, according to Sharp, addressing climate change is “the issue that is front and center in this country and around the world,” then the pivotal sequela in the United States is the cost of reducing greenhouse gas (GHG) emissions and how to design policies to achieve reductions at the lowest possible cost.

Senior Fellow and RFF’s Director of Energy and Natural Resources Billy Pizer moderated the June 4 event that examined how the McKinsey report arrived at its conclusions to those questions. Joining him were McKinsey & Company Director Ken Ostrowski; Congressional Budget Office’s Senior Advisor for Climate Policy Terry Dinan; and RFF University Fellow Richard Newell, a professor at Duke University’s Nicholas School of the Environment and Earth Sciences.

The McKinsey report joins a long series of reports that assess individual opportunities for energy efficiency and combine them in a bottom-up approach to determine the overall price of such reductions. However, this approach—so different from the traditional one spawned by microeconomic theory that looks

at market responsiveness to higher energy prices to derive a top-down price for reductions—has drawn criticisms and concerns from the economic community, some of which surfaced at the RFF event.

Most of the event centered on a single graph in the McKinsey report that separates various GHG reduction opportunities into negative and positive abatement, with an outlay less than \$50/ton, for a total reduction of up to 4.5 gigatons. Negative abatement comes from energy efficiency opportunities that save more than they cost, such as residential lighting, where the long-term savings from more expensive energy-efficient bulbs outweigh the lower price of regular bulbs.

Essentially, if all of the McKinsey report’s projected energy efficiencies were captured, they would offset about 80 percent of the incremental growth in the demand for electricity by 2030. In dollars, the projected capital outlay in the McKinsey report totaled \$1.4 trillion over 25 years, set against roughly \$1 trillion of capital investment.

So why aren’t the economists and policy-makers breathing at least a small sigh of relief? Well, according to Dinan, negative abatement measures aren’t new and have spurred a long-standing debate over why they haven’t been used. At least part of the problem has been consistently low energy prices in previous decades, diluting the motivation to seek out low-cost alternatives. But the lack of action doesn’t necessarily indicate a market failure or the need for a standard or subsidy, and Dinan cautioned that identifying true market failures is a prerequisite to determining the need for a

supplemental price policy. However, she noted, the numerous technology options in the report “really underlines the need for an economy-wide, uniform policy such as a cap-and-trade program or a tax.”

But before a policy is created, Newell urged that models and analyses of specific policies be used to assess the overall costs of GHG mitigation. Each model has multiple possible scenarios, and each of those can translate into dramatically different costs: from less than \$50 in the McKinsey report to more than \$80 according to the Energy Information Agency analysis of Lieberman-Warner, almost doubling the projected expense of emissions abatement.

Many experts expect both the marginal and total costs of substantial reductions to be positive and significant rather than zero, making climate policy expenditures highly uncertain and raising the value of measures containing costs and allowance prices. In addition, while the debates will inevitably continue, it may well be impossible to know the total cost.

“The wide range of opinions about the expense of any given reduction really highlights the need for a price ceiling and a price floor,” Dinan concluded. “In a sense, it’s kind of an academic debate whether or not for \$50 a ton you’re going to get a lot of reductions or a minor amount of reductions. You set the price and then you see how far you go.”

Newell may have summed it up best when he said the danger in a study like McKinsey’s is the message that “we can do climate policy at zero cost. That’s the one-line message, and that one-line message is incorrect.” And, since we’re not going to be able to monitor total cost, “we should figure out what we’re willing to pay incrementally and, if we get a lot free from energy efficiency . . . then we should go beyond that because protecting the climate is valuable.”

With the Senate unable to resolve anything in their debate on June 4, and failing to pass Lieberman-Warner on June 6, formulating and approving a climate policy is at a temporary standstill, leaving a very clear need to keep the conversation going elsewhere. ■

► www.rff.org/rff/Events/US-GHG-Reduction-Price-and-Policies.cfm