

Accelerating the Greening of China

Natural Resources Defense Council





China, the world's oldest living civilization, is at a crossroads. In the past three decades, China has experienced the greatest story of economic growth the world has ever seen, with hundreds of millions of Chinese people lifted out of poverty and the creation of a burgeoning new middle class. In innumerable ways, life has improved markedly for vast numbers of people in the world's most populous nation.

Yet, this growth has come at an enormous cost and resulted in some of the most serious environmental challenges the world has ever faced. China recognizes that a fundamental shift in its approach to economic growth is needed. Chinese leaders understand that the country's pollution, if left unresolved, threatens to erase all of the impressive advances that China has made in recent years.

For more than 10 years, NRDC has worked in China with local partners to address these challenges and created innovative solutions for a cleaner, healthier environment. Our work in China builds on our longstanding expertise in the United States and elsewhere in the areas of energy, health, market transformation, and environmental enforcement.

China is now mobilizing to confront its enormous environmental challenges and NRDC is there, working with key Chinese government agencies, research institutes, lawyers, and environmental groups—from our first international office in Beijing—to help build a better environment for China and for the world.

Through our *Partnership for the Earth campaign*—unparalleled in size and scope—we will sharply focus NRDC's work over the next decade on solving the most daunting environmental problems now confronting humankind, including in China, where our ten-year objective is to help avert environmental disaster by halving its growth in energy demand, halving mercury consumption, and shifting production to clean energy technologies.

Why China, Why Now?



A drive through the streets of Beijing conveys the magnitude of the environmental challenges facing China better than any statistics ever could. Often, the air is a murky haze caused by a multitude of factors, including streets choked at mid-day with cars that have replaced the masses on bicycles. In Beijing alone, the number of cars on the streets grows by as many as 1,000 per day.

China is now home to 20 of the 30 most polluted cities in the world, according to the World Bank.

New office buildings and residential towers rise from the dust on every street corner in cities across the country—structures that will consume 50 percent of China's energy and 42 percent of its potable water, and more than 50 percent of its materials.

China emits more sulfur dioxide and mercury than any other country in the world and could surpass the United States in carbon emissions as soon as 2007.

China is the world leader in coal consumption, using more than the United States, Russia, and India combined each year—fueling, in large part, a manufacturing industry that now produces one-third of the world's computers and refrigerators, one-half of its textiles, digital cameras, and DVDs, and 60 percent of its air conditioners and copy machines.

And China's pollution does not recognize borders. Particulate matter, sulfur dioxide, ozone, mercury and other substances originated in China are reaching other parts of the world, even other continents.

Fortunately, China has expressed willingness at the highest levels to confront its environmental challenges head on and is vigorously promoting international environmental collaboration. Although the environmental challenges facing China are severe, opportunities for transformative change are immense if we move quickly. NRDC has developed a reputation over the past decade as a trusted advisor to Chinese leaders and is working with local partners to capitalize on these opportunities for change.

NRDC's Winning Strategies to Meet China's Environmental Challenges



NRDC was the first international environmental organization to establish a clean energy program in China. Over the last decade, our team of experts has helped China to develop clean, efficient and affordable energy and environmental policies, strategies and technologies. In recent years, we have expanded the scope of our work to capitalize on new opportunities in environmental enforcement and public participation, health, and market transformation.

Our Approach

NRDC's primary role in China is to support leading domestic efforts on environmental protection. We believe that successful, sustainable efforts at environmental protection must be driven from within China and are proud that NRDC has been on the ground in Beijing and around the country to help accelerate these efforts. To this end, we have partnered with the key actors in China's government, academia, non-governmental organizations, and legal community to help promote cutting-edge environmental solutions for China. NRDC is also approaching the private sector, including multinational corporations, to change supply chain practices that contribute significantly to China's environmental problems.

Our Methods

Our methods are varied. We work at the highest levels of government to assess key targets of opportunity, improve environmental laws and policies, and transform market incentives. We also work at the local level on concrete pilot projects and grassroots efforts to build capacity and awareness. Our approaches are united by their potential to bring about major impact to the global environment.

Promoting Global Warming Solutions and Clean Energy Innovations

NRDC is internationally recognized for its extensive expertise in the area of clean energy and improvement of energy productivity. Our cross-cutting initiatives aim to limit greenhouse gas emissions, reduce local pollution, and enhance global energy security. In particular, we lead initiatives in the areas of:

- Energy efficiency.
- Green buildings/smart growth.
- Clean energy technologies.

“We have developed a sound cooperative relationship with NRDC over the past few years. The persistent and effective work carried out by NRDC in Jiangsu in the fields of power demand side management, energy efficiency and emissions reduction has profound significance to Jiangsu’s sustainable development. We look forward to continuing and enhancing our cooperation with NRDC.”

THE GOVERNMENT OF JIANGSU PROVINCE

Improving Energy Efficiency

The NRDC Advantage

NRDC's work on energy efficiency spans the world. For example, we have focused on California, where we helped develop efficiency codes, standards and incentives that have allowed the state to increase its economy by more than 40 percent since 1973 without increasing its per capita energy consumption. By contrast, per capita energy consumption in the rest of the United States increased by 50 percent during the same period.

Today's Successes

NRDC assisted the Chinese government in developing tough lighting standards for buildings that could stop 60 million metric tons of carbon from being sent into the atmosphere each year. To reduce the energy loss associated with power supplies (which waste as much as 70 percent of incoming electricity), we led a global, multiyear effort to establish a single worldwide specification. Fully adopted, this specification could help to avoid carbon emissions in China equivalent to that of taking 600,000 to 650,000 vehicles off the road.

Tomorrow's Solutions

NRDC is working with Chinese experts to develop large-scale energy efficiency incentive programs that use a portion of electricity rates to promote widespread adoption of energy efficient technologies. Our analysis shows that such programs could avoid the need to build 500 to 700 coal-fired power plants in China over the next decade.

Shaping Green Building Practices

The NRDC Advantage

NRDC was instrumental in the development of the LEED green building standard, which has been used to certify more than 1,500 green buildings around the world. Most recently, NRDC led the effort to create the LEED-ND standard, which will help guide developers and communities to build greener neighborhoods.

Today's Successes

NRDC managed the development of China's first internationally certified green building, which uses only one-quarter of the energy and produces only 40 percent of the wastewater of a typical Beijing office building. We also helped Chongqing, a city of 30 million people, develop China's first regional energy standard for residential buildings, and China's Ministry of Construction to craft national energy standards for buildings that reduce energy needed for heating and cooling by 50 percent.

Tomorrow's Solutions

NRDC will assist the Ministry of Construction in implementing a national green building standard for China, and collaborate with Beijing Municipality on a major green building retrofit program for government and commercial buildings. We will continue to develop training programs to promote green building development and smart growth in key model cities.

China's Ministry of Construction awarded NRDC its first international Green Building Innovation Award.

Spurring a Shift to Cleaner Energy

The NRDC Advantage

NRDC's energy experts have been leaders in promoting renewable energy solutions and fighting global warming pollution in the United States. For example, NRDC was instrumental in promoting the passage of legislation in 2006 in California setting forth the first enforceable carbon caps in the United States.

Today's Successes

NRDC promotes the use of technologies that can help reduce pollution and the carbon impacts of coal, such as coal gasification with carbon capture. Our advocacy efforts helped to make coal gasification-based polygeneration one of the top priorities in China's 2006-2015 National Research and Development Plan. We also supported the creation of a national roadmap on coal gasification development that has led to the construction of several large demonstration facilities to be completed by 2010. On the local level, NRDC has also worked with partners to promote biofuels and hydrogen fuel cells in China. Our efforts resulted in the establishment of the Shanghai Partnership for Fuel Cell Vehicle Commercialization, a public-private program modeled on the successful California Fuel Cell Partnership.

Tomorrow's Solutions

To reduce the need to build more conventional coal power plants in China, we will continue to aggressively promote the development and application of renewable energy and advanced coal technologies.

Promoting Market Transformation

NRDC is working on efforts to create incentives for multi-nationals and Chinese companies to “green” their supply chains.

Creating Incentives to “Green” the Supply Chain

The NRDC Advantage

At a time when many corporations span the globe, transforming markets can sometimes yield faster environmental reforms than transforming government policy. NRDC has earned a well-deserved reputation for working directly with corporations to clean their operations, products, and services. We have worked in the chemical, electronics, and paper industry, among others, to achieve reductions in toxic chemical wastes and releases, as well as to develop more environmentally protective raw material supplies.

Today’s Successes

NRDC is working with local researchers and environmental officials to support the innovative Greenwatch environmental ranking system in Jiangsu Province. We are identifying factories and industrial sectors with large potential for environmental improvement in preparation for work with multi-national corporations to “green” their supply chains.

Tomorrow’s Solutions

NRDC will work with multi-national retailers and manufacturers to develop “preferred supplier systems” and other incentives for factories with strong environmental performance in key industrial sectors. We will highlight opportunities to improve lagging facilities, and continue to promote the capacity of Jiangsu and other provinces to implement this innovative system.

Protecting the Health of People in China—and the United States



NRDC is working with national and provincial government agencies to reduce the risks to human health from toxic chemical pollutants.

Protecting People from Toxic Chemicals and Pollutants

The NRDC Advantage

NRDC is a leading expert in the United States on the science of toxic chemicals. We provide expert evaluations on implementation of all major U.S. pollution laws, including the Clean Air Act, Clean Water Act, Food Quality Protection Act, and Safe Drinking Water Act. We have been instrumental in bringing about the phase-out of numerous dangerous chemicals where safer, cleaner alternatives exist. We currently lead an international effort to reduce the supply and demand for mercury in global commerce to, among other things, reduce the impact of mercury in fish in the global food chain.

Today's Successes

To solve the mystery of which Chinese Industries use large quantities of mercury, NRDC worked with China's State Environmental Protection Administration (SEPA) to create a comprehensive inventory of all significant industrial uses of this toxic metal in China. We identified a large, unique use in China's chemical industry that had not previously been recognized in the international literature.

Tomorrow's Solutions

We are working with SEPA to identify safer alternatives to mercury in all major areas where it is used and to provide the scientific basis for further policy and regulatory development. We are bringing international experts to the table to help develop alternatives to mercury in instances where commercially viable alternatives do not currently exist.

Strengthening Enforcement and Public Participation



NRDC is working with government, lawyers, and the public to improve enforcement of Chinese environmental laws and policies and to build capacity for greater public participation in decision-making processes.

Building Capacity for Public Involvement in Environmental Protection

The NRDC Advantage

In the United States, NRDC has helped to shape most of the rules governing citizen participation in environmental decision-making, public access to environmental information, and environmental enforcement. NRDC staff played an instrumental role in the drafting of the Aarhus Convention, the leading international agreement on environmental public participation.

Today's Successes

NRDC helped to close a loophole for stale environmental impact statements, extend time for public comment, and eliminate caps on numbers of people participating in hearings. NRDC has also cooperated with local partners to train hundreds of environmentalists, journalists, and government officials on domestic and international environmental law implementation and public participation.

Tomorrow's Solutions

NRDC is creating a comprehensive web resource with plain-language explanations and analysis of Chinese and international laws on environmental information and public participation. We are also designing a "train-the-trainers" program to help promote public involvement in environmental protection through commenting on development projects and plans, seeking environmental information and collaborating with government and experts to prevent polluters from violating environmental laws.

Strengthening Communities for Environmental Advocacy

The NRDC Advantage

NRDC is a leader in the United States in using legal advocacy for environmental protection. We have more than 35 years of experience in using the law and the courts to stop illegal polluters and improve implementation of environmental laws. Many of the most important environmental law cases in U.S. history were brought by NRDC.

Today's Successes

NRDC and a local partner created a citizens' guide on environmental rights and dispute resolution to educate the public on how to seek relief from environmental pollution. We are also working with local partners to train lawyers, judges, and environmental officials in approaches to using law and the courts to improve environmental protection.

Tomorrow's Solutions

We are collaborating with one of China's leading environmental law experts to develop proposals for a Chinese environmental public interest litigation system. We are also continuing to strengthen communities for environmental advocacy by, for example, bringing public health experts together with lawyers and environmentalists to create innovative ways to address the adverse health effects of environmental pollution.



Partnership *for the Earth*

— ■ NATURAL RESOURCES DEFENSE COUNCIL ■ —

We can ensure a sustainable future for life on Earth, but it will take a special partnership between NRDC and donors who have the environmental commitment and the financial means to make a real and lasting impact on the daunting problems we now face. We are seeking an unprecedented level of funding—\$400 million—to launch and sustain NRDC's *Partnership for the Earth* campaign. But then, the need for that support is unprecedented. Through our *Partnership for the Earth Campaign*, we intend to invest \$20 million in the greening of China. For more information about contributing, please contact Jack Murray, Director of Development at +1 212-727-4449 or jmurray@nrdc.org.

“NRDC has undertaken an ambitious strategy to tackle the daunting environmental challenges now confronting the global community. By establishing a \$1 million Emanuel Fund for China, we feel we can help address the critically urgent environmental problems in China today—ensuring the outcomes NRDC envisions for tomorrow.”

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Natural Resources Defense Council

We are an international, nonprofit environmental organization with more than 1.2 million members and online activists. NRDC's lawyers, scientists, and other environmental specialists work to protect public health, natural resources, and the environment. Since our founding in 1970, NRDC has been a powerful force for environmental protection in the United States, China, and elsewhere. In addition to our New York City headquarters, NRDC has offices in Washington, D.C., Los Angeles, San Francisco, the Midwest, and Beijing.

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