Inventory of Environmental Work in China

In this third issue of the *China Environment Series*, the Inventory of Environmental Work in China has been greatly expanded, both in breadth and in depth. We have enlarged the inventory coverage beyond U.S. government and nongovernmental activities to include the projects and investment of multilateral organizations and other governments. We highlight a total of seventy-two organizations and agencies in this inventory and provide information on 479 projects. This larger inventory helps to paint a clearer picture of the patterns of aid and investment in environmental protection and energy efficiency in the People's Republic of China. In the spring of 2000 this inventory and later updates will be made available as a searchable database on the Environmental Change and Security (ECSP) website (http://ecsp.si.edu). The four categories of the inventory are listed below:

Part I. United States Government Activities

Battelle-Advanced International Studies Unit (AISU)

Web address: http://www.battelle.org/
Web address: http://www.pnl.gov/china
Web address: http://www.pnl.gov/aisu

Beijing Energy Efficiency Center (BECon)

Partners: Energy Research Institute, Lawrence Berkeley National Laboratory, U.S. Environmental Protection Agency, World Wildlife Fund, Department of Energy

BECon was established in 1993 in cooperation with three organizations—Battelle, Lawrence Berkeley National Laboratory, and the World Wildlife Fund. Today, it has a full-time staff of twelve professionals and many consultants. BECon is leading high-level projects for the World Bank and United Nations Development Programme, and has contributed to many world-class reports on China's energy options. Work with BECon is an on-going collaboration.

Business Plan Training

Partners: Beijing Energy Efficiency Center, China Energy Conservation Investment Corporation, others TBD.
Status/Schedule: Targeted completion date December 2001

Energy efficiency can not only help China become more economically competitive, but also improve the quality of life of ordinary people and reduce growth in greenhouse gas emissions. Despite these advantages, financing energy efficiency projects in China is very difficult. Vendors and potential partners for efficiency projects often complain they do not know who can approve a project and who can provide security for the financing. Energy managers at the provincial level and below are also not prepared to function in the newly emerging system to replace command and control regulation with market forces. They need training to learn the latest ideas in energy efficiency technology, financing, and management. This project will provide experience for both Chinese and foreign partners that will help make the Chinese market more transparent and influential. It will also equip Chinese entrepreneurs and energy planners to take full advantage of the market forces that have such a high potential to reduce energy use. A fundamental barrier is the lack of knowledge to prepare business plans that address and provide solutions to these prob-

lems. Business plans are important in any market economy, but particularly so in a country like China where risks are high, macroeconomic problems are pervasive, and managers with experience in business planning and project finance are rare. China offers many attractive energy-efficiency opportunities, but Chinese managers do not know how to develop them into "bankable" projects. Disciplined preparation of business plans will become even more critical in the wake of recent financial crises in Asia. This project is funded by the W. Alton Jones Foundation and the U.S. Environmental Protection Agency.

Climate Action Update

Partner: Woodrow Wilson Center

The United States and China together produce almost forty percent of the greenhouse gas emissions that now threaten to alter the global climate. Negotiations between the two greenhouse leaders over how and when to mitigate carbon emissions suffer from a lack of awareness regarding what the other has accomplished. The bilingual update from Battelle and the Wilson Center will help policymakers in each country understand what each county has done in an effort to improve negotiating mutually acceptable climate change protection policies. The bilingual pamphlet *Climate Action in the United States and China* was published in May 1999 and is available on-line at http://ecsp.si.edu. Hardcopies may be obtained by contacting the Environmental Change and Security Project at the Woodrow Wilson Center.

Developing Countries and Global Climate Change: Electric Power Options for China

Partners: The Beijing Energy Efficiency Center and the Energy Research Institute
Status/Schedule: Completion date 2000

This Project is funded by the Pew Center on Global Climate Change and will analyze the impact of different power

Glossary

ACIAR	Australian Centre for International Agricultural Research
BMZ	Federal Ministry for Economic Cooperation (Germany)
CICETE	China International Center for Economic and Technical Exchanges
CIDA	Canadian International Development Agency
COFERT	Council on Foreign Economic Relations and Trade
ESCOs	Energy Service Companies
FY	Fiscal Year
GEF	Global Environment Facility
GHG	Greenhouse Gases
GTZ	German Technical Cooperation (Germany)
JICA	Japan International Cooperation Agency
MOFTEC	Ministry of Foreign Trade and Economic Cooperation
MOST	Ministry of Science and Technology (China)
OCR	Ordinary Capital Resources
OECF	Overseas Economic Cooperation Fund (Japan)
OPCV	Overseas Projects Corporation of Victoria (Australia)
SEPA	State Environmental Protection Administration (China)
SETC	State Economic and Trade Commission (China)
SMEs	Small and Medium Enterprises
SSTC	State Science and Technology Commission (Chinese Ministry of Science and Technology)
TASF	Technical Assistance Support Funds
TVEs	Township Village Enterprises
UNDDSMS	United Nations Department for Development Support and Management Services
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific, and Cultural Organization

supply pathways in five rapidly developing countries, including China. It will build on our previous China sector study by focusing on how decisions to add new capacity are reached. The team will simulate a number of least-cost policy scenarios and make recommendations on promising options.

Economic and Environmental Modeling

Partners: Beijing Energy Efficiency Center, Energy Research Institute
Status and Schedule: Completion date December 2000

Economic, energy, and environmental modeling will become increasingly important in China as market reforms continue to reshape the economy. Policymakers will need realistic models to explore energy and climate change policy options and to minimize total development expenditures. The U.S. EPA is supporting a series of modeling workshops to share information on computable general equilibrium (CGE), optimization, and hybrid models, analyze potential scenarios aimed at reducing mitigation costs, and build the community of Chinese and international experts.

Least-cost Power Options for China: The Next 75,000 Megawatts

Partners: Energy Research Institute and the Beijing Energy Efficiency Center
Status/Schedule: The final report should be complete by October 1999

This Project is funded by the Pew Center on Global Climate Change and will analyze the impact of different power supply pathways in five rapidly developing countries, including China. It will build on our previous China sector study by focusing on how decisions to add new capacity are reached. Modelers will account for the full environmental costs of power supply options. The team will simulate a number of least-cost policy scenarios and make recommendations on promising options.

Natural Gas Development

Partners: U.S. Environmental Protection Agency, BECon, University of Petroleum-Beijing, Chinese and U.S. natural gas companies
Status/Schedule: Targeted completion date October 2001

Natural gas has many advantages over coal, yet historically it has played a minor role in China's energy sector. Chinese policymakers are developing a renewed interest in natural gas as a way to fuel economic growth without the environmental and health impacts of coal combustion. To boost natural gas availability, a number of barriers must be removed to make it more competitive. This study—one of the ten agreements reached between EPA Secretary Carol Browner and her Chinese colleagues last spring—will explore supply, transmission and distribution, environmental, pricing, and regulatory issues to accelerate the development of China's natural gas system.

DEPARTMENT OF AGRICULTURE

Web address: http: //www.usda.gov

Agricultural Technology

Focus: Agriculture

This research agreement covers exchanges on: 1) U.S. dry land mechanized production technology; 2) remote sensing technology for crop yield projection; 3) U.S. food safety systems; 4) biological control of plant pests; and 5) botanical/germplasm information.

Biological Control

Partners: Chinese Academy of Agricultural Sciences (CAAS)
Focus: Biological Research

This is a ten-year research agreement with CAAS to collect, evaluate, and exchange biological control agents and natural enemies for integrated pest management of crop diseases, forest pests, range land, and aquatic weeds to reduce pesticide inputs. The work will be performed at the joint Sino-American Biological Control Laboratory in Beijing.

Biological Control of the Asian Long-Horned Beetle (Anoplophora glabripennis) in China

Focus: Pest Control

The U.S. Forest Service is developing cooperative research to control the Asian long-horned beetle. This very aggressive pest has Chinese origins, but has been found in the United States. Currently, eradication efforts have been undertaken in the United States and preliminary information is being gathered through Chinese counterparts at various academies and universities.

Biological Control of Hemlock Wooley Adelges (Adelges tsugae)

Partners: Academy of Forestry, and Provincial Forestry Bureaus of Yunnan and Sichuan
Focus: Forestry, Pest Control

The U.S. Forest Service has engaged in cooperative research with the Chinese Academy of Forestry and Provincial Forestry Bureaus of Yunnan and Sichuan to find biological control agents, primarily other insects, to control the hemlock wooley adelges which have been introduced to the United States. This pest is causing significant mortality to hemlock trees in eastern forests. Preliminary screening has been completed and collections are being made to test the efficacy of the insects in controlling the adelges.

Biological Control of Kudzu (Pueraria lobata)

Focus: Weed Control

The U.S. Forest Service is working to develop cooperative research in the biological control of kudzu. This weedy plant species is causing significant damage to forested, agricultural, and other lands in the southern portions of the United States. There are expensive chemical control options, but they can not be used in sensitive situations such as riparian, wetland, and residential areas. Identification of collaborators and exploratory studies are currently underway.

Biological Control of the Pine Mealybug (Oracella acuta) in China

Partners: Chinese Forestry Administration, Academy of Forestry, and the Provincial Forestry Bureau in Guangzhou
Focus: Pest Control

The U.S. Forest Service is assisting the Chinese Forestry Administration through the Academy of Forestry and the Provincial Forestry Bureau in Guangzhou to find natural enemies to control the mealybug, which was introduced into China from the United States. The pest is severely affecting the growth of forest plantations in China. Several insects from the United States have been collected, tested, and released into plantations in China to control the mealybug. The released insects have appeared to be established and are spreading to other areas.

Biological Control of the Mile-a-Minute Weed (Polygonum perfoliatum)

Focus: Weed Control

The Forest Service is researching strategies to control the mile-a-minute weed with several Chinese partners. This

weedy plant species is invading many parts of the United States. Exploratory studies are underway to find natural enemies to this weed.

Cochran Fellowship Program

Focus: Agricultural Trade
Status/Schedule: Ongoing into 2000

This program provides training opportunities in the United States or in country for senior and mid-level specialists and administrators involved in agricultural trade and agribusiness. Since 1989, 214 participants have received training in wood product use, flour milling, agricultural policy, grain and soybean marketing, and study tours related to dairy, livestock, poultry, and seeds.

Emerging Market Program

Focus: Agricultural Technical Assistance
Status/Schedule: Ongoing into 2000

This program promotes U.S. agricultural exports to emerging markets by providing technical assistance. Examples of recent projects conducted in China include livestock genetics and artificial insemination; grain storage management; daily cattle nutritional supplements using agriculture forage by-products; and marketing of seeds in China.

Forest Management

Focus: Pest Control

This research agreement promotes collaborative research on finding natural enemies of the insect pest oracella acuta. This pest severely reduces the growth and form of U.S. Southern pines in Chinese industrial forest plantations in the United States.

Genetic Resource Conservation

Partners: Chinese Academy of Agricultural Sciences (CAAS)
Focus: Botany

This research agreement is a ten-year research project with CAAS to collect, evaluate, and exchange native, unique or primitive plant varieties for plant genetic resource conservation in international germplasm repositories.

Letter of Discussion Between the Chinese Ministry of Forestry and the USDA Forest Service

Partner: Chinese Ministry of Forestry
Focus: Forestry

The Chinese Ministry of Forestry (now the Chinese Forestry Administration) and the U.S. Department of Agriculture/Forest Service in 1993 signed a Letter of Discussion to express their mutual interest in cooperating in all areas of forestry, including sustainable forest management, germplasm exchange, remote sensing, and fire management. Discussions are currently underway to sign a Memorandum of Understanding to strengthen cooperation between the two agencies.

Long-Term Research Programs

Partners: USDA's Agriculture Research Service, Natural Resources Conservation Service, Forest Service, Economic Research Service
Focus: Botanical Research
Status/ Schedule: Ongoing into 2000

Project to conduct long-term research programs in such fields as plant genetic resource studies; conservation of

germplasm; exchange of biological control agents; restoration and conservation of grasslands; reforestation; and agricultural economic studies and statistical surveys.

Reforestation

Focus: Forestry

The cooperation agreement headed by Department of Agriculture/Forest Service has worked in cooperation for more than ten years on China's reforestation program. This program has included the establishment, monitoring and genetic screening of North American tree species plantations in China.

Restoration and Conservation of Grasslands

Partners: Chinese Academy of Agricultural Sciences (CAAS)
Focus: Conservation Research

Ten-year research agreement with the CAAS for restoration and conservation of grassland plant ecosystems in China's Inner Mongolian region and the U.S. Great Plains area.

Soil Stabilization

Focus: Soil Conservation

Cooperative agreement to collect, evaluate and exchange tree, shrub and plant species suitable for soil stabilization, windbreaks and erosion control to conserve and maintain valuable land areas.

Sustainable Agriculture Videos

Partner: Global Village of Beijing
Focus: Agricultural Education
Status/Schedule: Ongoing into 2000

Project is producing ten twelve-minute video segments on sustainable agriculture practices in the United States. By highlighting key issues in the success of U.S. agricultural sustainability, the series will serve as an educational model for the development of sustainable agriculture in China.

Sustainable Forest Management in Northern Yunnan Province

Partners: Yunnan Provincial Government, and The Nature Conservancy
Focus: Forestry

The U.S. Forest Service will provide focused technical support to a sustainable forest management project in Northern Yunnan Province. The project, which is being developed by the Yunnan Provincial Government, has the support of the central government, The Nature Conservancy, and a Thai development company. The aim of the project is to provide a balance of conservation and development in this area of China. Currently, the project is in the planning stages. The Forest Service has assisted in the conceptual planning of the multiple resource management project and may provide further technical assistance as the project progresses.

Transfer of Forest Health Monitoring Technology

Focus: Pest Control, Pest Monitoring

The Forest Service is providing current forest health monitoring technologies to the Chinese Forestry Administration and the Anhui Forest Bio-control Station. Activities include assisting the Administration and Station to acquire aerial videography systems, training in the use of the equipment, training in the development of ground based forest pest monitoring, and integrating monitoring data into a geographic information system (GIS).

U.S./PRC Scientific Cooperation in Agriculture

Partners: Ministry of Agriculture
Focus: Agricultural research
Status/Schedule: Initiated 1978

This ongoing project is intended to promote U.S. agricultural priorities, encourage long-term cooperation in science and technology, and promote agricultural trade with China.

Water and Soil Quality

Focus: Water and Soil Quality Improvement
Status/Schedule: Meeting Held 20-21 April 1999

A breakout session on agriculture and forestry was held in Tucson, Arizona at the U.S.-China Water Management Conference. Panels of experts from both countries gained a better understanding of agriculture and water management problems and practices.

U.S.-China Agreement On Agricultural Cooperation

This three-part agreement was worked out in April of 1999 between the United States and China. The three areas of cooperation are outlined below.

Increased Technical Cooperation and Scientific Exchange

Under this objective, China and the United States will encourage research institutes and agricultural enterprises to collaborate on high-tech research and development, including education symposiums in cooperation with U.S. land grant universities, opportunities for Chinese leaders to visit the United States to observe and study management systems, and production technology.

Specific Technical Exchanges to Develop the Agricultural Sectors of Both U.S. and China

China and the United States will participate in a wide range of technical cooperation and assistance initiatives that span a variety of commodities, such as field and horticulture products, meat, dairy, and livestock, as well as such disciplines aquaculture, biotechnology, and natural resources and environment.

Resolution of Trade Disputes

Under this objective, the United States and China agree to accelerate the removal of all non-tariff measures restricting trade in a gricultural products that cannot be justified under World Trade Organization (WTO) rules. The agreement removed longstanding technical barriers to trade in wheat, citrus, and meat. The two countries agreed that disagreements should be settled scientifically. This moved both countries closer toward rational two-way trade in agricultural products.

Department Of Commerce/International Trade Administration

Web address: http://www.ita.doc.gov/
Web address: http://www.ita.doc.gov/uscs/
Web address: http://infoserv2.ita.doc.gov/ete/eteinfo.nsf

Department Of Commerce Role In U.S.-China Bilateral Environmental Fora

U.S. Joint Commission on Commerce and Trade (JCCT)

Established in 1992, the mission of the JCCT is to facilitate development of commercial relations and related

economic matters between the U.S. and China with the direct objective of promoting advancing bilateral commercial agendas. The JCCT is led by the U.S. Secretary of Commerce and the Chinese Ministry of Foreign Trade and Economic Cooperation (MOFTEC). They meet annually in a Plenary Session. The JCCT's Environment Subgroup identifies, organizes, and supports events and programs such as technology demonstrations, training workshops, trade missions, exhibitions, conferences, and seminars that foster environmental and commercial cooperation between the two countries. The American USG Agency co-chairs are USDOC's Office of Environmental Technology Exports and the EPA's Office of International Activities. The Chinese Co-chair is SEPA. For information about the 1999-2000 Work Plan activities of the Environment Subgroup, contact: Susan Simon, Office of Environmental Technologies Exports (ETE), USDOC; Phone: 202-482-0713; E-mail: Susan_Simon@ita.doc.gov.

U.S. China Forum on Environment and Development

The inter-agency U.S.-China Forum was established in March 1997 with the expressed mission to address environmental and development issues in water resources/treatment, climate change, SO_2 emissions, and energy efficiency. The four working groups and the U.S. and Chinese lead agency implementers are (China agencies noted in bold):

- Energy Policy-U.S. Department of Energy and the Chinese State Development and Planning Commission;
- Environmental Policy-U.S. Environmental Protection Agency, State Department; Chinese Ministry of Foreign Affairs and the Chinese State Environmental Protection Agency;
- Science for Sustainable Development-White House Office of Science and Technology Policy; Chinese Ministry of Science and Technology; and,
- Commercial Cooperation-U.S. Department of Commerce; Chinese Ministry of Foreign Trade and Economic Cooperation.

The Commercial Cooperation Working Group is chaired by USDOC and covers environmental trade promotions aspects in a broad range of industry sectors, including, energy, automotive, housing, environmental technologies, agriculture, and other areas of sustainable development. For information about the CCWG, Contact: Susan Simon, Environmental Technologies Exports (ETE), USDOC; Phone: 202-482-0713; E-mail: Susan_Simon@ita.doc.gov or Kathryn Hollander, Basic Industries (BI), USDOC, phone: 202-482-0385, E-mail Kathryn_Hollander@ita.doc.gov

Export Assistance Services

Environmental Technologies Exports (ETE)

The Environmental Technologies Exports (ETE) office is the principal resource and key contact point within the U.S. Department of Commerce for U.S. environmental technology companies. ETE's goal is to facilitate and increase exports of environmental technologies, goods, and services by providing support and guidance to U.S. exporters. ETE's staff covers key countries, with an emphasis on the designated emerging markets, including China. ETE and EPA are the American co-chairs of the bilateral U.S.-China Joint Commission on Commerce and Trade (JCCT) Environment Subgroup. The ETE published an Export Market Plan for China and plans an updated version for Fall 2000. Contact: Phone: Susan Simon at 202-482-0713; E-mail: Susan_Simon@ita.doc.gov.

Market Access and Compliance

The Market Access and Compliance(MAC) country desk officer at the U.S. Department of Commerce helps U.S. companies overcome trade and investment barriers. The China country desk officer informs American companies of rights and benefits under existing trade agreements, and provides comprehensive, up-to-the-minute information and analysis on market barriers. Working with other U.S. Government agencies, the MAC officer can help a company devise strategies to overcome market access barriers in such areas as import policies, lack of intellectual property protection, standards, testing, labeling, and certification, services barriers, government procurement, investment barriers, export subsidies, and bribery and corruption. The USDOC Market Access and Compliance China Desk officer is Cheryl McQueen, Phone: 202-482-3932; E-mail: Cheryl_McQueen@ita.doc.gov.

The U.S. and Foreign Commercial Service (U.S. & FCS)

The U.S. and Foreign Commercial Service (FCS) at the Department of Commerce is a global network of offices strategically located in more than 220 cities worldwide, offering U.S. exporters a comprehensive range of export facilitation services. FCS officers and foreign national staff serve American companies in Hong Kong and five cities in the People's Republic of China: Beijing, Shanghai, Guangzhou, Chengdu, and Shenyang. Mainland China services include market analyses, business counseling, market and policy information, and introductions to Chinese government officials and business contacts. In Hong Kong, U.S. Asian Environmental Partnership (USAEP), which is affiliated with the USAID, is active and a source for grant support, trade leads, exchange programs, information distribution, and trade events sponsorship. US FCS Contacts:

Beijing
Christopher Adams, Commercial Attache, Phone: (86-10) 6532-6924,
E-mail: Christopher.Adams@mail.doc.gov

Chengdu
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Guangzhou
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Department Of Commerce/National Oceanic And Atmospheric Administration (NOAA)

Web Address: http://www.noaa.gov

Major Agreements And Protocols

U.S.-China Forum on Environment and Development

NOAA participates actively in the Vice Presidential U.S.-China Forum on Environment and Development. The Forum is an overarching policy dialogue led by Vice President Gore and the Chinese Premiere and has four working groups: Commercial Cooperation; Energy Cooperation; Environmental Policy; and Science for Sustainable Development. NOAA is primarily involved in the latter two working groups. NOAA was responsible for co-sponsoring the first concrete result of this Forum: the U.S./China Workshop on Natural Disaster Reduction and Mitigation, which was held 19-22 November 1997. Moreover, NOAA has taken a leadership role in other responsive activities, including the Workshop on Water Resource Management and new activities on Marine and Coastal Management. The third meeting of the Forum was held in January 2000 in Hawaii and resulted among its other accomplishments, in renewed enthusiasm for cooperation in the areas of natural disasters, water resources, coastal management, and climate science.

U.S.-China Science and Technology Agreement

The year 1999 marked the twentieth anniversary of the signing of the U.S.-China Science and Technology Agreement, one of the most prominent successes of U.S.-China relations. This umbrella agreement contains over thirty

individual protocols for science and technology cooperation based on mutual benefit. Two of these protocols—also signed in 1979—are administered on behalf of the United States government by the National Oceanic and Atmospheric Administration: the Marine and Fishery (M&F) Science and Technology Protocol and the Protocol for Cooperation in Atmospheric Sciences. In celebration of this important anniversary, Dr. James Baker traveled to China in September 1999 to participate in celebratory events for these two Protocols and to participate in a Workshop and Symposium on Climate, Environmental Change and Regional Impacts and the Impacts of Ocean Variability on Climate Change.

The umbrella Science and Technology Agreement, combined with the two protocols, represent an important cornerstone in U.S.-China scientific and environmental relations. These agreements have supported innumerable activities encompassing the sharing of data and information, exchange of technical experts and expertise, and direct scientific collaboration, and have spawned groundbreaking new collaborative activities that form the basis for future policy exchanges.

The Protocol on Cooperation in the Field of Atmospheric Science and Technology

The Protocol on Cooperation in the Field of Atmospheric Science and Technology was renewed on 7 May 1999 without change for another five years. The Protocol has been in effect since 8 May 1979. Activities under the Protocol are divided into six major areas as follows: 1) Climate and Monsoon Studies; 2) Mesoscale Meteorology-such as typhoons, thunderstorms and tornadoes; 3) Satellite Meteorology; 4) Atmosphere Chemistry; 5) Meteorological Modernization; and 6) Training and Participation.

U.S.-China Marine and Fishery Science and Technology Protocol

Partners: Chinese State Oceanic Administration, the Ministry of Agriculture, and the Chinese Academy of Sciences

The NOAA Office of Oceanic and Atmospheric Research administers the Marine and Fishery Protocol, whose activities span the following five scientific areas: 1) Data and Information Exchange; 2) Marine Environmental Services; 3) Understanding the Role of the Oceans in Climate Change; 4) Living Marine Resources; and 5) Marine and Coastal Management. In China, NOAA's counterpart organizations for this agreement are the State Oceanic Administration, the Ministry of Agriculture, and the Chinese Academy of Sciences.

Marine and Coastal Management has become a major area of cooperation under the Marine and Fishery Protocol. In response to recommendations of the U.S.-China Environment and Development Forum co-chaired by Vice President Gore and the Chinese Premier, the U.S.-China Marine and Coastal Management Joint Coordination Panel was established in May 1998. The program supports activities in developing and operating an integrated coastal management framework, developing coastal use legislation, management and research of marine protected areas (corals, wetlands, and mangrove ecosystems), use of information technology to facilitate effective resource decision-making, marine pollution and mitigation, and comparative case studies. China and the United States have agreed to the following projects, which are scheduled for implementation in the year 2000 (pending funding): Twenty Year Assessment of Marine Environmental Monitoring (pollution), U.S.-China Partner Reserves Management Planning, Mooring Buoy Project Demonstration Project, Mariculture Management Study, Mangrove Restoration, Training in Application of GIS Information Systems, Comparative Case Study of GIS and MPA Management, Application of U.S. Monitoring Technology to Forecast Pollution Discharge, and a U.S.-China Water Quality Workshop, as well as a new effort to expand cooperation to include a bilateral workshop in coastal water quality in the year 2000.

U.S.-China Cooperation On Fisheries

High Seas Drift Net (HSDN) SHIPRIDER Program
U.S.-China Cooperation to Discourage High Seas Driftnet Fishing

On 3 December 1993, the United States and China signed the Memorandum of Understanding Between the Government of the United States of America and the Government of the People's Republic of China on Effective Coop-

eration and Implementation of the United Nations General Assembly Resolution 46/215 of 20 December 1991. This Memorandum of Understanding (MOU) established boarding procedures for law enforcement officials of either country to board and inspect U.S. or PRC flagged vessels suspected of driftnet fishing on the high seas. The MOU also established a shiprider program that allows PRC fisheries enforcement officials to embark on U.S. Coast Guard cutters during each driftnet fishing season. This program is implemented in part by NOAA Fisheries Office of Law Enforcement. As a bilateral enforcement agreement, the MOU negates the requirement for the United States and the People's Republic of China to enter into lengthy diplomatic discussions to obtain flag state authorization to conduct a fisheries enforcement boarding on the high seas.

International Convention for the Conservation of Atlantic Tunas (ICCAT)

The first year that a scientist from PRC attended the International Convention for the Conservation of Atlantic Tunas (ICCAT) Standing Committee on Research and Statistics was 1999. Chinese had participated in meetings since the PRC became a member, but until this year those individuals did not possess a scientific background. Through ICCAT, the United States and China are cooperating, along with other ICCAT members and participating entities, on fishery stock assessments and the provision of scientific advice for management of Atlantic tunas and tuna-like species.

PICES

China and the United States are founding members of PICES (the other members are Canada, Japan, the Republic of Korea, and Russia) and participate in all its scientific discussions. NOAA Fisheries scientists and scientists from other U.S. institutions interact with their Chinese counterparts according to the scientific agenda of PICES which addresses the entire range of current marine science issues. The next PICES annual meeting will take place in Hakodate, Japan, during October 2000.

Shellfish Aquaculture

The aquaculture program at NOAA Fisheries Milford Laboratory has had periodic consultations with China on scallop aquaculture techniques. China has used a genetic strain of bay scallop developed at this laboratory as the basis for developing their scallop aquaculture industry.

TED-Technology Transfer

P.L. 101-162, Section 609 requires the United States to embargo shrimp harvested with commercial fishing technology which may adversely affect sea turtles. The import ban does not apply to nations that have adopted sea turtle protection programs (e.g., requirements to use TEDS) comparable to those utilized in the United States or those nations whose fishing environment does not pose a threat of incidental take of sea turtles. The Department of State (DOS) is the principal implementing agency of this law, with NMFS serving as technical advisor, providing extensive TED training throughout the world.

In recent years China has been certified as not posing a threat of incidental sea turtle take due to their use of beam-type trawls. However, the most recent certification visit by U.S. personnel in 1997 revealed that some segment of the Chinese fishing fleet is using more conventional otter-type trawling gear, similar to that used in the United States, and which poses a significant threat to sea turtles. Therefore, the United States may consider working with China to transfer appropriate TED technology to that segment of the shrimp fleet fishing with otter-type trawls, and to evaluate the impact of beam trawls on sea turtles.

The Third World Fishery Congress in Beijing 31 October - 3 November 2000

The Third World Fisheries Congress will take place from 31 October to 3 November 2000 in Beijing. The Chinese Fisheries Society of its National Academy of Sciences is the organizer. NMFS is a financial sponsor of the Congress. The World Fishery Congress meetings are held approximately every four years. The Beijing Congress is particularly

noteworthy since China is the world's largest fishing and aquaculture producing nation. The Congress will focus on the factors that have lead to the rapid expansion of Chinese capture fisheries and aquaculture, and examine the sustainability of future development. The Beijing meeting is also significant because it is intended to be the venue for the first meeting of the World Fisheries Council, which is an international union of national professional societies dealing with fisheries. This newly formed Council has four members—societies from North America, the United Kingdom, Japan, and Australia—and the goal is to have China join before the Congress. The plan also calls for a "Beijing Declaration" marking the first meeting of the Council and calling for others to join to promote international cooperation.

U.S.-China Fisheries Consultations

In early 1999, the United States and China held their first wide-ranging consultation on fisheries matters in Washington, D.C. China's policy of continuing to expand its high seas fishing capacity is of concern to the United States and may serve as a basis for further bilateral interactions.

The Yellow Sea Large Marine Ecosystem Project

The NOAA Fisheries Office helped China seek funding from the Global Environmental Facility (GEF) to develop a monitoring and assessment project for the Yellow Sea Large Marine Ecosystem (YSLME). In 1998, the GEF made $350K available to plan the project, and a NOAA Large Marine Ecosystem expert is now serving on a five-member UNDP team to plan the YSLME project. NOAA is expected to provide further expert consultation to assist in its program implementation and review when research projects get underway.

Other Areas Of Cooperation With Noaa

Environmental Data

The NOAA National Geophysical Data Center (NGDC) and the State Key Laboratory for Environmental Information Systems agreed to cooperate on the CD-ROM release of a collection of environmental data (e.g., vegetation and soils) developed by the State Key Laboratory. Release of the data is anticipated in the third quarter of FY 2000. This database is likely to be the most extensive unrestricted scientific-environmental database of China in existence.

Exports of Captive Marine Mammals

There have been several exports over the past few years of captive marine mammals to zoos and marine parks in China under provisions of the Marine Mammal Protection Act. There is no current information of any exports planned or pending. No permit is required for exports, providing the government of China assures that standards for animal care will be met comparable to those that apply in the United States.

GLOBE

China joined the NOAA-led GLOBE Program on 18 October 1995, when U.S. Secretary of Commerce Ronald H. Brown and Chinese National Environmental Protection Agency Administrator Xie Zhenhua signed the GLOBE Agreement in Beijing. China has developed a very active GLOBE Program over the years and has been involved in many GLOBE environmental education activities inside and outside of China. Currently, there are twenty-eight GLOBE schools in China and twenty-nine trained GLOBE teachers. GLOBE students in China have reported over 52,500 scientific measurements to scientists through the GLOBE Website comprising the Hydrology, Soils, and Landcover Biology investigations. Chinese GLOBE Country Coordinator Jia Feng's goal is to build on GLOBE's presence in each province, growing to 100 schools in each of China's thirty-three provinces participating in GLOBE within the next few years. GLOBE China conducts an Annual GLOBE China Conference each year, followed directly by a teacher training workshop to train more teachers throughout the provinces. Their last annual conference and teacher training workshop was in March 2000.

GLOBE China has also been a successful example of implementation in seeking support from the private sector.

Sponsorship for equipment and activities for the first five years of the GLOBE Program in China was provided by Ameritech International Inc., beginning 18 October 1995. In April 1998, Mobil Oil established a fund called Mobil China Environmental Education Fund, of which a significant portion is being used to support GLOBE activities in China.

Technologies Specific to the Next Generation Radar (NEXRAD) System

In October 1999, the Director General of the People's Republic of China (PRC) National Meteorological Center (NMC), Dr. Qiu Guoqing, invited representatives of the National Climatic Data Center (NCDC) to visit China to provide briefings and discuss data processing, archiving, and servicing procedures and associated technologies specific to the Next Generation Radar (NEXRAD) system. A secondary purpose was to discuss activities and information technologies used to manage other types of climate data at the NCDC. The Director of the Chinese National Meteorological Center (NMC) and the Director of the Climate Data Center, both in Beijing, expressed a strong desire to establish a closer relationship with NOAA and the NCDC. In particular, they asked to increase the exchange of historical climate data between the United States and China. Over the next twelve to thirty months the NMC expects to place into orbit a geostationary weather satellite and deploy at least one hundred weather radars (U.S. NEXRAD) throughout China. The NMC is also considering the purchase of the Wind Profiler system for the Shanghai area and an automated tape library system for the Climate Data Center in Beijing.

Department Of Commerce/National Weather Service (NWS)

Web address: http://www.nws.noaa.gov

Cooperation Agreement: Hydrology

Partners: Ministry of Water Resources

The Ministry of Water Resources and NWS agreed in August 1994 to develop a prototype flood forecasting system for the Huai River Basin which will then be expanded and applied to the seven major rivers in China as part of a central flood control dispatching system. This project has been completed in China and the Ministry of Water Resources will be receiving special recognition by the Chinese central government for successful performance during the 1995 floods, which was based on this cooperation.

Department Of Energy (DOE)

Web address: http://www.doe.gov/
Web address: http://www.fe.doe.gov/int/china.html
Web address: http://www.eia.doe.gov/emeu/cabs/china.html

Asia-Pacific Economic Cooperation (APEC): Energy Working Group
Energy Efficiency and Renewable Energy (EERE) Project

Partners: Multiple

Under the APEC's Energy Working Group the EERE Project seeks to promote sustainable development in the Asia-Pacific region. APEC distributes information on the economies of member states regarding energy efficiency and renewable energy projects, and plans, technologies, and practices. APEC facilitates private sector interaction among member economies to expand the delivery of environmental technologies regionally. Cooperative programs include: 1) conducting workshops and seminars on technology development; 2) developing industrial energy efficiency best practices and measures manuals; 3) implementing energy-technology greenhouse gas mitigation projects; 4) developing an APEC energy efficiency information system database; and 5) forming expert groups to coordinate and monitor APEC's programs.

Asia-Pacific Economic Cooperation-Energy Working Group
Clean Fossil Energy Experts Group

Focus: Clean Energy, Coal, Oil and Gas
Partners: Multiple

This Clean Fossil Energy Group conducts studies, technical seminars and conferences and carry out projects such as coal-mine gas recovery and utilization projects in China.

Protocol for Cooperation in the Fields of Energy Efficiency and Renewable Energy Technology Development and Utilization

Partner in the Energy Efficiency Area: State Development Planning Commission

Under the energy efficiency segment of the Protocol action plans are underway in ten priority areas (energy efficiency policy, information exchange and business outreach, electric motor systems, district heating, cogeneration, lighting, buildings, transformers, industrial process, and finance), with significant progress being made in electric motor systems, buildings, finance, and policy. Workshops on DoE's Motor Challenge program on electric motor pumping systems and on international motor standards and testing procedures have been held in Beijing over the last two years. Also, plans are underway to implement a motor system pilot program in two provinces. Significant progress has also been made in the building's area. A technical feasibility design study for an energy efficient demonstration building in Beijing has been completed and a workshop was held to exchange information on U.S. and Chinese building technologies.

Partners in the Renewables Area: Chinese Ministry of Science and Technology, Chinese Ministry of Agriculture, State Economic and Trade Commission, and State Power Corporation

Under the renewables segment of the Protocol progress has taken place in the following areas: 1) installation of 125 solar home systems in Inner Mongolia; 2) development of an island wind/diesel village power project off the coast of Shandong Province; 3) technical assistance and training for rural electrification; 4) wind energy workshop in Beijing; 5) U.S.-China Business Development Workshop in Xian; and 6) three general agreements to pursue geothermal heat pump (GHP) demonstration projects in China.

Protocol on Fossil Energy Research and Development for Cooperation-Atmospheric Trace Gases
Partners: Chinese Academy of Sciences

The DoE and the Chinese Academy of Sciences established a joint research and information exchange activity exploring the relationship of climate changes and atmospheric levels of CO_2. Current activities include: 1) the study of the relationship among large-scale and regional-scale climate features and casual mechanisms; 2) analysis of general circulation models (primary models used to study and predict climate change); 3) analyses of instrumental data; and 4) measuring and analyzing methane emissions from rice paddy fields in China. DoE is currently negotiating a new fossil energy protocol with China's Ministry of Science and Technology, as a result, current activities could conceivably be modified under the new protocol.

Protocol on Fossil Energy Research and Development for Cooperation-Regional Climate Research
Partners: China Meteorological Administration

The objective of this protocol is to promote joint research and information exchange, to document regional climate and climate change, to predict regional climate and climate change, and to identify regional impacts of climate change. Current activities include: 1) updating of instrumental data and visitor exchange; 2) development and improved regional climate models necessary to quantitatively predict regional features of potential climate change; and 3) development of data sets to test for climate change and improve and verify regional and global climate models. DoE is currently negotiating a new fossil energy protocol with China's Ministry of Science and Technology,

as a result, current activities could conceivably be modified under the new protocol.

Protocol on Fossil Energy Research and Development
Cooperation on Clean Coal Technology (Two Initiatives)

Partners: Ministry of Science and Technology (MOST) with some funding from EPA (under the U.S. Technologies for International Environmental Solutions-USTIES-Program)

DoE provided MOST and the China State Power Corporation with technical and economic information on Integrated Gasification Combined Cycle (IGCC) technology to support China's efforts to do a demonstration project for which they have now received approval to proceed. DoE is currently negotiating a new fossil energy protocol with China's Ministry of Science and Technology, as a result, current activities could conceivably be modified under the new protocol.

Partners: Ministry of Coal Industry/Central Coal Research Institute

Joint Program on Market Issues Related to the Introduction of Clean Coal Technology in China.

U.S.-China Energy and Environment Technology Center

Partners: U.S. Environmental Protection Agency (USTIES Program), Chinese Ministry of Science and Technology, Private industry, and Academic institutions

The purpose of the Center is: 1) training and education on technical and financial issues; 2) project development in conjunction with Agenda 21, Green Program and Provincial Governments, and opportunities for U.S. investors and technology suppliers; and 3) to work with the Chinese in policy development. DoE supported activities under the Yixing Environment Industry Partnership will be folded into the Center.

U.S. Country Studies Program

Partners: Ministry of Science and Technology

The China Climate Change Country Study Program (CCSP), started in 1994, has been an integrated part of the U.S. Country Studies Program (USCSP), which is a Presidential Initiative for Climate Change Studies. This Study Program is part of the U.S. contribution to support UN Framework Convention on Climate Change (FCCC) which provides financial and technical assistance to developing and transition countries. The CCSP has been completed and the final report (English version) submitted to the USCSP in March 1999 and was published in December 1999. The CCSP is China's first nationwide comprehensive, systematic study to deal with challenge issues and mitigation strategies for climate change. The study involves the highest level of PRC Government, overseen by a State Councilor and directly reported to the China State Council. A national Climate Committee and a Climate Change Coordination Group were set up to coordinate and carry out this inter-agency study with a technical team consisting of more than 120 scientists and analysts from more than twenty-one government ministries and commissions as well academic institutions. China is now continuously working on its Climate Change Action Plan, with additional U.S. support, emphasizing upon various climate-friendly technology assessments for mitigation measures suitable for China's current sustainable development. The U.S. is also assisting China in developing socioeconomic modeling capabilities to facilitate China's evaluations on climate change policy adaptations for its active participation in Activities Implemented Jointly (AIJ) and Clean Development Mechanism (CDM) activities in the future. Therefore, the CCSP was further extended in 1999 with additional funding to help China develop an analytical framework to ascertain carbon mitigation technology options in the setting of a dynamic growth economy. The work includes the development of a technology database and the building of a dynamic liner-programming model, MARKAL. USDOE plans to use the China MARKAL to conduct a research project on the Clean Development Mechanism and permit trading. The expected completion for this work is the spring of 2001.

Department Of Health And Human Services/National Cancer Institute

Web address: http://www.os.dhhs.gov/
Web address: http://www.nci.nih.gov/

Research Agreement: Cancer

NCI is involved in collaborative epidemiological studies with Chinese scientists to identify the dietary and environmental determinants of esophageal, lung, and stomach cancers and choriocarcinoma in China.

Department Of Health And Human Services

Web address: http://www.hhs.gov/progorg

Research Agreements: Disease

The National Institute of Health supports collaborative research into several infectious and parasitic diseases with potential environmental links, including cryptosporidium, rotavirus, hantavirus, hemorrhagic virus, lyme disease, and hepatitis.

Department Of Interior/Bureau Of Reclamation

Web address: http://www.usbr.gov/
Web address: http://www.doi.gov/

Memorandum of Understanding: Water

Partner: Ministry of Water Resources

The Bureau of Reclamation and the Chinese Ministry of Water Resources have a two-pronged Memorandum of Understanding (MOU): 1) the exchange of ideas, information, skills, and techniques on water resources management and conservation, and 2) the exchange of information and technology for preserving and enhancing the environment. Under Annex I, Reclamation helped facilitate U.S. irrigation equipment manufacturers (through the Irrigation Association) to set up three demonstration projects around the city of Zhaoyuan in Shandong Province of China. The object of the demonstration program is to compare the effectiveness of different types of irrigation equipment, and the water savings achieved by the various pieces of equipment. A three-year demonstration program was begun after equipment installation was completed in the spring of 1997.

Reclamation and the Ministry of Water Resources are presently negotiating Annex II to the MOU. This annex would establish a Cooperative Training Program, with the following objectives: 1) further cooperative relations between the two organizations; 2) promote exchange of technical personnel and ideas between the countries; and 3) train administrative and technical personnel in all aspects of water resources management.

Department Of The Interior/Fish And Wildlife Service (FWS)

Web address: http://www.fws.gov/
Web address: http://www.fws.gov/index.html

Cooperation Agreement: U.S.-China Nature Conservation Protocol

Partners: Ministry of Forestry, Ministry of Agriculture, and the U.S. Geological Survey

The Fish and Wildlife Service (FSW) administers exchanges with China under the bilateral Nature Conservation Protocol. Exchanges carried out in 1997-1998 emphasized wetland and river ecosystem health, including studies of

factors affecting the reproduction and survival of sturgeon and other species in the Yangtze River. Training for Chinese specialists in wildlife forensic identification and in proper identification of live animals/plants and their parts and products at ports of entry is also a priority.

Department Of Interior/National Biological Service (NBS)

Web address: http://www.doi.gov/pfm/ar4nbs.html

Cooperation Agreement: Habitat Conservation

Partner: Fish and Wildlife Service (FWS)

The U.S.-China Nature Conservation Protocol is co-led by the NBS and the FWS. NBS activities in China include studies of the distribution and habitat requirements of migratory birds, spawning requirements of sturgeon species in rivers, propagation of freshwater mussels, research to support conservation of special status species such as the snow leopard and polecats, and training in biological monitoring and wildlife.

Department Of The Interior/U.S. Geological Survey (USGS)

Web address: http://www.nbs.gov/
Web address: http://www.usgs.gov/

Cooperation Agreement: U.S.-China Nature Conservation Protocol

Partners: U.S. Fish and Wildlife Service, and various Chinese government agencies

The U.S. Geological Survey (USGS), Biological Resources Division, along with the Fish and Wildlife Service lead the U.S.-China Nature Conservation Protocol. USGS activities in China include the design and deployment of telemetry for radio-tracking mammals, studies of special status species, research on the spawning requirements for sturgeon in major rivers, and training in biological monitoring and methodologies of wildlife research and management.

Protocol for Scientific and Technical Cooperation in Surveying and Mapping Studies

Active since 1985, this Protocol focuses on technology transfer and cooperation in the areas of digital cartography, spatial database design, geographical information system applications, remote sensing applications, and geodetic studies.

Protocol on Surface Water Hydrology

Under the 1981 Protocol on Surface Water Hydrology, there have been recent exchanges with Chinese individuals and scholars for water quality assessment studies.

Environmental Protection Agency (EPA)

Web address: http://www.epa.gov/
Web address: http://www.epa.gov/oia/prchina.htm

Assessment of the Chinese Air Quality Management Process

Partner: State Environmental Protection Administration

The year-long project calls for a collaborative assessment of China's air quality management process and potential for applying U.S. techniques within that process.

Automotive Technologies/Leaded Gasoline Phase-out

Partners: Office of International Activities, EPA Office of Air and Radiation (OAR)

A conference/workshop in Beijing held in October 1995, recommended that the Chinese government phase-out leaded gasoline, create tighter emissions restrictions, and improve transportation planning. EPA was an integral part of the adoption of legislation requiring the phase-out of leaded gasoline. EPA is still working with the Chinese government for the adoption of the other recommendations.

Beijing Energy Efficient Center (BECon)

Partners: Office of International Activities, Office of Policy

BECon is a quasi-nongovernmental center established to recommend policies for energy reform; encourage business ventures for upgraded technologies; sponsor demonstration projects; and implement public education programs. Recent work focused on energy efficient lighting, motors, transportation, and demand side management.

CFC Phaseout Program

Partners: United States Navy, Ministry of Public Security, United Nations Development Program and SEPA

The first project under this program, which is now completed, trained Chinese fire protection experts on operation of halon 1211 recovery/recharge machines, and improved fire extinguisher service, and maintenance practices to prevent unnecessary halon emissions. An initial assessment of halon use in major halon manufacturing provinces was completed. Additional work is underway on mobile air conditioning units. Funding was provided from bilateral contributions to the Montreal Protocol Fund.

Children's Lung Function Study

Partners: National Center for Environmental Assessment and the Chinese National Monitoring Center of SEPA

This is an epidemiological study of the effects of air pollution on childrens' lungs. Health surveys were sent out twice a year to children in four Chinese cities: Wuhan, Chongqing, Guangzhou, and Langzhou. The project yields extremely valuable data for use in U.S. standard setting, especially for particles (fine and PM10). This study was begun in 1988 and is currently in the final stage of data analysis.

China Room Air Conditioner Monitoring Study

Partner: The American Council for an Energy Efficient Economy (ACEEE)
Status/Schedule: Targeted Completion August 1999

ACEEE led efforts to monitor room air conditioners in 150 households in three Chinese cities-Beijing, Shanghai, and Guangzhou. Data collected on room air conditioner energy use and operating patterns in various climates in China will establish the basis for identifying cost-effective measures for improving air conditioner efficiency.

Cleaner Air and Cleaner Energy Technology Cooperation

Partner: State Development and Planning Commission

This project will expand work under the Technology Cooperation Agreement Pilot Project (TCAPP) by developing and implementing investment and commercial market strategies and clean energy technology projects in four key areas: 1) efficiency improvements in industrial coal-fired boilers; 2) clean coal technology-integrated gasification combined cycle power generation; 3) high efficiency electric motors; and 4) grid-connected wind electric power. The project will also be expanded to include additional key technologies based on China's priorities.

Climate Change Country Study

Partners: Multiple agencies

Since 1994, EPA and DoE have been actively engaged with the PRC on the issue of global climate change through the U.S. Country Studies Program. The country study involves the highest levels of the PRC, including more than fifteen State Commissions and Ministries. This study is an interagency effort to assist China in the development of a national action plan for climate change. More than one hundred Chinese analysts and technical experts have been involved in this study, which is the largest climate change analysis ever conducted in China. The China Climate Change Country Study includes four major elements: 1) an inventory of greenhouse gas emission sources and sinks; 2) an assessment of China's vulnerability to climate change, including sea level rise; 3) a technical assessment of adaptation and mitigation measures such as public education; and 4) a socioeconomic evaluation of climate change policy options. The study was completed and in late 1999 an English version was published by Tsinghua University Press (See Climate Change section of bibliography). The U.S. Country Studies Program is also providing financial and technical support for the development of a National Action Plan, building on the results of the country study. This effort includes: 1) coordination of State Commissions and Ministries by the National Climate Committee; 2) public consultation; 3) technology assessments; 4) review and selection of options by the National Climate Committee; and 5) preparation of a future National Communication to the UNFCCC. The national action plan is expected to be completed in approximately one year.

Climate Change Research

Partner: EPA Office of Policy, Department of Energy

The EPA is working in conjunction with China on three areas of research: 1) quantification of local environmental and health co-control benefits of green house gas (GHG) mitigation; 2) national economic modeling and analysis of costs of alternative strategies and levels of GHG commitments including flexibility mechanisms; and 3) Technology Cooperation Agreements Pilot Project (TCAPP). The first local-environmental and health co-benefit analysis is being carried out in Shanghai. The second effort included a joint workshop on economic modeling in January 1999. The third area, TCAPP, has been co-founded by DoE and is part of a multi-country USG effort.

Coalbed Methane Recovery and Utilization

Partners: Chinese Ministry of Forestry, United Nations Development Programme (UNDP), GEF

The EPA and the UNDP manage a Global Environmental Facility project to demonstrate advanced methane recovery technologies at three sites in China. Cooperation principles were signed in 1991 to launch various projects, including a comprehensive assessment, country program development, feasibility studies, and model site development for coalbed methane recovery and use. This environmental management project also aims to establish technical support and staff training for a Coalbed Methane Clearinghouse at the former China Ministry of Coal. In 1995 an International Coalbed Methane Conference was held and led to the publication in 1996 of a joint report entitled Reduced Methane Emissions from Coal Mines in China: The Potential for Coalbed Methane Development. The EPA is also providing technical cooperation to an APEC coalbed methane scoping effort in China.

Coal Mine Methane Market Development Plan

Partner: State Administration of Coal Industry

Project would develop a market development plan for methane which is released from active coal mines. Methane, a potent greenhouse gas, is released into the atmosphere in the process of coal mining.

Cooperation on Development of Energy Efficient Buildings

Partner: State Environmental Protection Administration

Project will assist the Chinese in collecting data and developing program designs for the preparation of a proposal for international funding (e.g., the Global Environmental Facility) to promote the construction and operation of energy-efficient buildings.

Cooperation to Assess Benefits of Programs to Reduce Air Pollution and Protect Public Health in China

Partner: State Environmental Protection Administration

Cooperation will continue to evaluate the air pollution and public health benefits of technologies and policies that reduce greenhouse gas emissions in Shanghai. Research will be extended under the project to Beijing and one other city and then to a preliminary national assessment by the end of 2001.

Cooperative Study of Natural Gas Utilization in China

Partner: State Development and Planning Commission

A team of experts from government and key technical institutes in China and the United States will assess the potential for expanding natural gas production and imports; appropriate applications across the economy; the climate, environmental, and health benefits of increased gas use; and policies and programs needed to achieve the desired levels of natural gas use. The assessment may also identify opportunities for which credits certified under the Clean Development Mechanism could help finance natural gas projects in various sectors.

Energy Efficient Buildings Project

Partners: Department of Commerce, U.S.-Asia Environmental Partnership, Hong Kong Polytechnic, Hong Kong EMSD, and Megawatts Company

This Hong Kong project will demonstrate energy efficiency measures for buildings.

Energy Efficient and CFC-free Refrigerators

Partners: National Council of Light Industry, Beijing Household Electrical Appliance Research Institute through SEPA

This project, which is now completed, worked at the regulatory and factory levels to assist with the conversion of refrigerator factories to produce models which use fifty percent less energy and are non-ozone depleting. The project was funded in phases by U.S. bilateral contributions to the Montreal Protocol Fund, and additional GEF funding. Additional work was done through an EPA grant to the University of Maryland in FY 1994 for design and testing of domestic Chinese refrigerators and to the Lawrence Berkeley National Laboratory for market transformation of the refrigerator industry.

Energy Efficient Lighting

Partner: Lawrence Berkeley National Laboratory (LBNL)

LBNL is assisting China to develop product quality standards and a testing, certification, and labeling program to ensure consistency in results among testing labs in China and to support lighting products confidence among Chinese consumers. LBNL is also assisting China in documenting barriers to lighting efficiency and successes in overcoming these barriers as a way of monitoring and evaluating the Chinese Green Lights Project.

Energy Futures Study

Partners: U.S. National Academy of Sciences (NAS), and the Chinese Academy of Sciences
Status/Schedule: Completed late 1998

NAS and the Chinese Academy of Sciences/Chinese Academy of Engineering are undertaking this study to examine energy growth scenarios in China under several different policy paths. This study is co-funded by EPA,

the Department of Energy, and the National Research Council (NRC).

Feasibility Study on the Use of Market Mechanisms to Achieve Sulfur Dioxide Emissions Reduction in China

Partner: State Environmental Protection Administration

Cooperate on examining the possibilities for using market-based mechanisms for sulfur dioxide emissions control in three phases: 1) an educational workshop on how the U.S. developed its SO_2 emissions trading program and the fundamental features of the program; 2) a pre-design study of the nature and effects of the SO_2 problem in China, available control technologies and costs, and regulatory and institutional issues relevant to the design of an effective emissions trading program; and 3) the design of a pilot program for SO_2 emissions trading in China.

Health Effects of Coal Combustion in Xuan Wei County, Yunnan Province

Partners: National Health and Environmental Effects Research Lab and NEPA

This study is a multidisciplinary project that uses epidemiology, chemical analyses, and bioassays to determine the impact of domestic coal burning, ambient air pollution, and other factors on lung cancer incidence. Results from this study have been presented in several international conferences and were published in *Science* magazine. The study is now focusing on the development of human health bio-markers.

Integrated Gasification Combined Cycle (IGCC) Power Generation Deployment to China to Achieve Emissions Reduction

Partners: Department of Energy and Texaco

This project's goal is to construct an IGCC demonstration power plant that uses one-third less water and produces less CO_2 and toxic emissions than other coal-burning technologies. The project includes cost efficiency studies, research and identification of manufacturing capabilities in China, and workshops and training.

Membrane Drinking Water Treatment

Partners: Department of Agriculture (USDA), Shandong Province Water Resources Management Office, Zibo City, Ministry of Geology and Mineral Services, and the Institute of Hydrology

This project's goal is to demonstrate cost-effective technologies for the control of toxic chemicals and pathogenic microorganisms in drinking water in China.

Pollution Prevention and Control for China's River Basins

Partner: Office of International Activities

This project involves technical cooperation with China to utilize U.S. environmental pollution-control technology and management approaches in solving a water pollution problem labeled as a top priority by the Chinese government. In addition, technology workshops have also been held in several provinces as part of this project.

Pollution Prevention and Control in the Huai River Basins

Partners: World Bank and the Delaware River Basin Commission

The project will bring U.S. technologies and approaches to work on the vast environmental damage in the Huai River Basin in China and the Delaware River Basin in the United States. Working closely with the World Bank, the EPA has sponsored a technology seminar, as well as U.S. private sector monitoring work and training.

Pollution Prevention and Environmental Education

Partners: EPA Office of International Activities, Air and Waste Management Association, Tianjin City, Anhui Province, Global Village Institute

This project, coordinated by the Air and Waste Management Association through an EPA grant, will work with Tianjin City and Anhui Province on improving the capacity of pollution prevention centers. The EPA will also work with the Global Village Institute on environmental education programs.

Room Air Conditioner Energy-Efficiency Standards

Partners: Lawrence Berkley National Laboratory and the U.S. Department of Energy

The market for room air conditioners has skyrocketed in the 1990s, from 241,000 in 1990 to 10,000,000 in 1998. This expanded use of air conditioners has caused an immense energy drain in China. The EPA has worked with Chinese State Bureau of Quality and Technical Supervision to improve efficiency. They have developed a new standard scheduled to apply to all units manufactured after 1999, thereby reducing energy consumption by fifteen percent.

Room Air Conditioner Market Transformation

Partners: State Economic and Trade Commission (SETC)

This project included the collection and analysis of hourly air-conditioner energy use data from 150 households in three cities over twelve months. This study provided key information for a SETC proposal to the Global Environmental Facility (GEF). The GEF project is a multi-year effort to increase consumer purchases of highly energy-efficient air conditioners. Implementation is expected to start in October 2000.

Sectoral Energy Efficiency Studies

Partner: Lawrence Berkeley National Laboratory

Through the Lawrence Berkeley National Laboratory and various Chinese partners, this project will assess alternative energy utilization scenarios for particular sectors. The first sector of interest will be building materials and buildings, which are major contributors to greenhouse gas emissions. The final outcome will be a detailed roadmap of technologies, environmental benefits, and costs for these sectors.

Study of the Effect of Particulate Matter on Children's Lung Function

Partner: State Environmental Protection Administration

This project extends and expands an existing project on children's lung function by studying the effect of particulate matter on children.

Study of the Relation of Air Pollution to Asthma and Other Respiratory Health Problems

Partner: State Environmental Protection Administration

Under this project, the U.S. and China will cooperate to initiate detailed measurements of particulate matter in Wuhan and Beijing. Data would be analyzed by U.S. and Chinese experts and related to data on asthma and other respiratory health problems.

Technical Assistance for Energy-Efficient Lighting in China

Partner: Office of Air and Radiation

This project provides training at China's State Bureau of Technical Supervision and the Beijing Energy Efficient Center in the development of standards for energy-efficient lighting in China and in test procedures to improve production in China of energy efficient fluorescent lamps.

Technology Seed Grant Program through the National Association of State Development Agencies

Partner: Office of International Activities

This project consists of technical cooperation with China to transfer U.S. environmental technologies to areas that are most dire need in China. The National Association of State Development Agencies provides assistance to state development agencies, which fund demonstrations of U.S. environmental technologies in China.

U.S.-China Energy and Environment Technology Center

Partners: Department of Energy, Tulane University, State Science and Technology Commission (SSTC)

The goal of this three-year project is to facilitate the development of U.S.-China relations in energy and environmental technology related to electric power. It will also provide a forum for information exchange, demonstrations, and research on energy and environmental technologies such as clean coal, oil, and gas.

U.S.-China Partnership for Industrial Pollution Prevention and Energy Efficiency

Partner: State Environmental Protection Administration

This initiative will significantly expand EPA's cooperative program with China on promoting cleaner production and pollution prevention. This initiative will focus on three main areas: 1) sharing experience on applying public policy and regulatory approaches that encourage pollution prevention; 2) capacity building for technical and compliance assistance programs that promote pollution prevention and energy efficiency through government industry partnerships and "beyond compliance" incentive programs; and 3) information networking and exchange to improve access in China to U.S. technical materials, tools, and training resources, and to improve EPA understanding of China's cleaner production activities and regulatory system.

USEPA/NASDA Program for Environmental Technology Transfer-China

Partners: National Association of State Development Agencies (NASDA)

EPA funds a program run by NASDA to provide small seed grants of up to $20,000 to private companies and their non-profit sponsor to gain access to the Chinese environmental technology market. Eight proposals approved by a panel in a competitive solicitation are now underway. No further grants are available.

Vehicle Emissions/Leaded Gasoline Phase-out

Partner: National Environmental Protection Administration (now SEPA)

EPA has cooperated with SEPA to assist in China's adoption of legislation calling for the nationwide phaseout of lead in gasoline by 2000. Such legislation has already been implemented in Beijing, Guangzhou, and Shanghai. In addition, a SEPA official spent three months at the U.S. EPA, and EPA is working closely with SEPA and other organizations on implementing regulations, including training at national and local levels, on mobile source air pollution control, and lead phase-out. EPA is also funding technical and public information materials development.

Wind Energy Mapping

The objective of this project is to show Chinese officials potential sites in China that are economically and environmentally viable for U.S. wind energy equipment.

EPA Projects Conducted Outside Of Environmental Protocols

The following eight projects fall under the U.S. TIES Initiative. This initiative was terminated due to lack of funding

in FY 1996, but was continued using FY 1995 funding. The combination of all projects falling under this rubric represent a commitment of U.S. $3,225,000 in public funds. This commitment was leveraged against other sources of support from participating partners to accomplish projects valued at U.S. $9 million.

Asia Pacific Initiative for Renewable Energy and Energy Efficiency

Partners: Office of International Activities, Department of Energy

This project was completed utilizing technical cooperation with China to increase the acceptance and understanding of renewable energy technologies in Asia through training workshops, development of model regulations, and technology demonstrations.

Demonstration of Combined NOx/SOx Control Technology

This is an ongoing project testing low-cost NO_x and SO_x removal technologies that could reduce SO_x and NO_x emissions by up to seventy percent, as well as remove mercury. This project will encompass mercury measurement in coal, training Chinese in stack mercury management, provision of sampling hardware, and selected stack measurements.

Hazardous Waste and Toxic Disposal

Partners: State of New York, Office of International Activities, Office of Solid Waste and Energy Responses

This project through technical cooperation sought to strengthen China's waste regulations, provide demonstration facilities, and sample technical specifications for hazardous waste treatment technologies for China. This project has been completed.

Integrated Gasification Combined Cycle (IGCC) Power Generation

Partners: Office of International Activities, Department of Energy

This is an ongoing project involving technical cooperation with China to construct an IGCC demonstration power plant, which uses one-third less water and produces less CO_2 and toxic emissions than other coal burning technologies. The project include cost efficiency studies, research and identification of manufacturing capabilities in China, and workshops, and training on IGCC technology and benefits.

Membrane Drinking Water Treatment

Partners: Office of Research and Development and the Department of Agriculture (USDA)

This is an ongoing project involving technical cooperation with China to demonstrate cost-effective technologies for the control of toxic chemicals and pathogenic microorganisms in the drinking water in China.

Pollution Prevention in the Petrochemical, Pharmaceutical, and Metal Finishing Industries of China

Partners: State of Illinois, Office of International Activities, Office of Research and Development

This project involving technical cooperation with China on pollution prevention technologies and practices through workshops, assessments, and technology demonstrations has been completed.

U.S. - China Energy and Environment Technology Center

Partners: Office of International Activities, the Department of Energy

This is an on-going project involving technical cooperation with China to disseminate information on energy and environmental technology related to electric power. The project also encompasses information exchange, demonstrations, and research on energy and environmental technologies such as clean coal, oil, and gas.

Wind Energy Mapping

This project was completed utilizing cooperation with China to compile information on wind resources in the People's Republic of China. This mapping project is expected to facilitate greater U.S. private sector involvement in wind energy projects in China. The end result was greater wind technology sales by one U.S. company.

Lawrence Livermore National Laboratory (LLNL)

Web address: http://www.llnl.gov/

Cost Effective Desalinization Using Capacitive Deionization

Partners: Various Asian countries

Discussions and contracts are currently being discussed with China and other Asia-Pacific states.

Environmental Technologies and Evaluation Methodologies

Partners: Tulane University, USA/China Institute and the Center for Energy and Environmental Technologies at the China Academy located at Tsinghua University.

With the U.S. Department of Energy, the LLNL is establishing models for various regions of China that are in need of energy and environmental analysis along with economic evaluation of new technologies for implementation. LLNL is also collaborating with the Fossil Energy group within U.S. DoE to assist in planning for new clean energy and renewable sources of energy for China.

Regional Water Resource Planning and Infrastructure Building

Partners: World Bank and Asian Development Fund Infrastructure Building

This is sponsored by the World Bank and Asian Development Fund and includes a new water project in Sichuan Province.

National Aeronautic And Space Administration (NASA)

Web address: http://www.nasa.gov/

Research Agreement: Mapping

Partner: Chinese Academy of Sciences (CAS)

Under a 1992 agreement between NASA and the CAS, a Chinese Principal Investigator is participating in the NASA Dynamics of the Solid Earth (DOSE) program. Through this agreement, NASA and CAS are cooperating in exchange of data from Satellite Laser Ranging Stations, Very Long Baseline Interferometry, and Global Positioning Systems.

National Park Service (NPS)

Web address: http://www.nps.gov/

March for Parks

Bilateral meetings were held between Chinese and U.S. parks officials in 1996. The aim of these meetings was to discuss park management strategies and techniques. High level meetings with the Chinese and officials from the

Department of Interior and National Park Service were also held in 1996. These meetings discussed the possibility of formalizing a relationship among the National Park Service, Peace Corps, and the Chinese Ministry of Construction.

National Park Service/Office of International Affairs

United States National Park Service-People's Republic of China Cooperation

Partners: Peace Corps, Republic of China Cooperation

In 1988, the NPS developed an agreement with the Sichuan Provincial Construction Commission to allow cooperative technical exchanges, as well as joint planning and scientific research activities between these two agencies.

Nuclear Regulatory Commission (NRC)

Web address: http://www.nrc.gov/

Cooperative Agreement: Nuclear Safety

Partner: China's National Nuclear Safety Administration

The NRC has an active program of cooperation with China's National Nuclear Safety Administration and works within the framework of the U.S. Congressional sanctions that limit cooperation to publicly available safety information. Current and future cooperation will focus on power reactor operating performance, material safety, and emergency preparedness.

United States Army Corps of Engineers

Web address: http://www.usace.army.mil/

Research Agreement: Dams

Partner: National Science Foundation

Jointly with the National Science Foundation, the Corps of Engineers is studying the dynamic behavior of arch dams including effects of interaction of the dam with the impounded water and foundation rock.

United States Export-Import Bank

Web Address: http://www.exim.gov/

Clean Energy Program

Partners: China Development Bank, Department of Energy
Funding: U.S. $100 million
Status/Schedule: Approved December 1999

This Clean Energy Program provides financing to Chinese enterprises for the purchase of U.S. equipment and services for clean energy projects, which include wind, solar, geothermal, clean coal, and industrial cogeneration projects. The program has been designed to bring in projects with high rates of return and small projects that fall below the threshold of conventional loans. The Chinese Development Bank will be the borrower under the program, however, final loan applications will be accepted only after approval of the State Development Planning Commission. The China Development Bank can apply for either a direct loan or a guaranteed loan. The program will provide the most favorable terms allowed under OECD guidelines including maximum repayment terms, capitalization of interest during construction, and financing of eligible local costs up to fifteen percent of the value of the eligible U.S.

export contract. The Eximbank can make enhancements to the program by offering yen financing at a reduced rate, but the borrower would bear the foreign exchange risk. The Department of Energy will provide expert assistance in project identification and review.

United States Peace Corps

Web address: http://www.peacecorps.gov/

Teaching English as a Foreign Language (TEFL) Project, Including Development of Several Environmental English Classes

Partners: Chinese Education Association for International Exchange, and the Sichuan Educational Association for International Exchange

Peace Corps/China (in China, Peace Corps is known as the U.S.-China Friendship Volunteers) is presently exploring development of expanded environmental activities in China. There is considerable interest in enlarging the existing TEFL project to enhance the English skills of Chinese working in the environmental area. Possibilities include providing Peace Corps English teachers to nature reserves, forestry colleges, and specific offices focusing on environmental protection activities. In addition, the potential exists to develop an environmental project utilizing parks and wildlife, environmental education, and forestry volunteers. Exploratory meetings are underway in Beijing and Chengdu.

ASIA PROGRAM

Below is a selection of recent Asia Program meetings at the Woodrow Wilson Center. For additional information on these meetings please refer to the Woodrow Wilson Center website (http://wwics.si.edu).

9 May 2000

Conference on U.S.-China Relations Since the End of the Cold War

This conference includes panel sessions on the following themes:

- The Impact of Tiananmen and the End of the Cold War
- Human Rights and MFN, 1993-2000
- The Taiwan Dilemma
- Convergences and Divergences of U.S.-China Strategic Interests in the 21st Century

Speakers: Nancy Pelosi, U.S. Representative; Stanley Roth, Assistant Secretary, Bureau of East Asian and Pacific Affairs, U.S. Department of State; Richard Solomon, President, United States Institute of Peace; Mann, James, Columnist, Los Angeles Times; Xing Qu, Xing, Associate Dean, Foreign Affairs College (Beijing), and others.

16 May 2000

Censoring History: Citizenship and Memory in Japan, Germany, and the United States

Speaker: Laura Hein, Fellow, Woodrow Wilson Center and Associate Professor of History, Northwestern University; and Commentator: Louise Young, Assistant Professor of History, New York University

24 May 2000

India and the U.S. Congress

Speaker: Arthur Rubinoff, Public Policy Scholar, Woodrow Wilson Center, and Professor of Political Science, University of Toronto.

Part II. Bilateral Government Activities

Australia

Note: All Grant and loan values are converted from Australian dollars to U.S. dollars using the exchange rate of A $1 = U.S. $0.6493, the market rate on October 14, 1999 at 2:31 PM EDT.

Australian Government

Action Program for Water Sector

Partners: World Bank, Chinese Ministry of Water Resources, Chinese Ministry of Finance, Chinese Ministry of Foreign Trade and Economic Cooperation (MOFTEC)
Focus: Water Pollution, Floods, Water Supply
Funding: U.S. $1.3 million (Grant)
Status/Schedule: Initiated September 1998, Completed August 1999

This project aimed to assist the Chinese Ministry of Water Resources in addressing fundamental water resource problems such as floods, pollution, environmental degradation, and water shortages. This water sector project also worked towards developing solutions to fragmented water management at both the national and provincial levels. The project's activities encompassed solution-oriented studies addressing topics such as flood damage prevention and mitigation, water pollution management, water supply augmentation, water demand management, water conflict resolution, and integrated basin management (Source: *Chinabrief*, November 1998).

Renewable Energy Project

Partners: MOFTEC, State Council, State Development and Planning Commission, State Economic and Trade Commission, Ministry of Science and Technology, State Environmental Protection Agency
Focus: Renewable Energy
Funding: U.S. $2.9 million (Grant)
Status/Schedule: Initiated 1998, Targeted for Completion 2003

The project aims to remove barriers that currently impede the widespread adoption of renewable energy technologies. The project hopes to strengthen the capacity of China to shift from supply-oriented technology deployment to demand-driven investment and consumer-friendly approaches. In order to accomplish these goals, the project will develop market-based institutions and instruments for renewable energy industry and investors. It supports pilot projects for five renewable technologies: solar and wind hybrid power systems for rural electrification, wind farms, biogas production, biogas co-generation, and solar hot water heaters.

AusAid

Web Address: http://www.ausaid.gov.au/

Automation of Hydrological Data Collection Project

Partners: China Ministry of Water Resources, Data Electronics
Focus: Flood Control
Funding: U.S. $909,000 (Grant portion of soft loan)
Status/Schedule: Initiated September 1997

This project has been helping China to construct an automatic hydrological data collection system so that approximately half of the rain gauges and water control stations in China could log data automatically. The goal is to provide

more accurate hydrological data, which is essential for making accurate flood control forecasts. Foreign assistance is needed because China can not manufacture solid-state data loggers to the necessary degree of accuracy.

Beijing Natural Gas Distribution Project

Partners: Beijing Natural Gas Company, Premier Controls
Focus: Gas
Funding: U.S. $840,000 (Grant portion of soft loan)
Status/Schedule: Initiated 1997, Completed 1998

This soft loan supported the supply of equipment and technical expertise for rebuilding part of the Beijing natural gas distribution network and for reconstructing the high-pressure feeder main from Wang Si Ying to Zhong Guan Cun. The feeder main was having serious problems and required complete rebuilding.

Development of Ecological Environment, Changtou River Valley, Shanxi Province

Partner: Shanxi Council on Foreign Economic Relations and Trade (COFERT)
Focus: Soil Erosion, Animal Husbandry
Funding: U.S. $63,000
Status/Schedule: Initiated June 1995, Completed June 1996

The goal was to reduce soil erosion and to increase opportunities for animal husbandry and self-sufficiency in four pre-existing experimental areas in the Changtou River Valley. Funds were used to provide technical equipment for the existing Ecological and Agricultural Supervision Station and to purchase goats, grass, seeds, and tree saplings.

Firewood Replacement Project, Du An County

Partner: CARE Australia
Focus: Deforestation, Erosion
Funding: U.S. $49,000 (Grant)
Status/Schedule: AusAid funding Initiated 1994, Completed 1995; CARE Funding Initiated September 1997

This project supplies firewood to the poorest and most remote communities in Du An county, by planting an improved mix of tree species, introducing the cultivation of fruit trees for income, and supporting the purchase of more efficient stoves. The goal of these efforts is to slow the erosion of steep hillsides and the rate of related environmental damage in the county. The project encompasses 1,000 households in seven villages.

Guangxi Urban Environment Project

Partners: Guangxi Regional Environmental Protection Bureau, World Bank, Australian consultants CMPS&F Pty. Ltd. and Sinclair Knight Merz
Focus: Water Pollution, Industrial Waste
Funding: U.S. $666,000 (2 grants combined)
Status/Schedule: Initiated July 1995

The project has helped to improve wastewater management and treatment and municipal and industrial waste management in Nanning and Guangxi Provinces. Its goal is to protect and improve the health of natural waterways.

Hainan Land Resource Fundamental Information System

Partners: China National Bureau of Surveying and Mapping, Hassall & Associates
Focus: Surveying, Regional Planning
Funding: U.S. $3.2 million (Grant)
Status/Schedule: Initiated 1995, Completed 1998

The project addressed the critical shortage of information regarding the land and natural resources of Hainan Island. This information was needed for planning sustainable development on the island. In particular, the project developed a Land-Resource Fundamental Information System and applied it to development planning. The project helped to prepare local development plans for Sanya City and a regional plan for Hainan Island as a whole.

Hefei Sewage Treatment Project

Partners: Hefei Provincial Construction Authority, Blohm and Voss (Australia) Pty. Ltd.
Focus: Sewage Treatment
Funding: U.S. $1.9 million (Grant portion of soft loan)
Status/Schedule: Initiated 1995, Targeted Completion 2001

The project designed and constructed a 150 million liters per day sewage treatment plant in Hefei City. The Australian supplier provided equipment, design expertise, supervision, and training for the construction and commissioning of the plant. Constructing the plant was the first stage of the sewage master plan for Hefei City. Although the project's construction ran behind schedule because of unfavorable weather and design flaws, the Asian Development Bank nevertheless agreed to provide U.S. $21 million in loans to construct a second treatment facility, which as of September 1997 was scheduled to be completed in 2001.

Hubei Urban Environment Project

Partners: Hubei Environmental Protection Bureau, World Bank, Overseas Projects Corporation of Victoria (OPCV) in association with Canal Wagner Pty., Kinhill Engineering PL, and Gippsland Water
Focus: Sewage, Municipal Waste, Industrial Pollution Control
Funding: U.S. $935,000 (Grant)
Status/Schedule: Initiated 1994, Completed 1995

The Australian grant funded the preparation phase for a U.S. $125 million dollar World Bank project, which focuses on capacity building, policy formation, and institution building in the fields of night soil utilization, municipal solid waste management, industrial pollution control, water quality monitoring, and sewage and sanitation.

Inner Mongolia Grasslands Conservation Project

Partner: Inner Mongolia Department of Foreign Economic Relations and Trade
Focus: Grasslands Conservation
Funding: U.S. $4.0 million (Grant)
Status/Schedule: Initiated 1996, Targeted for Completion 2000

The project has multiple objectives: to establish a variety of profitable village level enterprises—especially those run by women, to improve animal control and grasslands utilization standards and policies, to improve animal husbandry standards, to build the breed base of flocks and herds, and to help build the capacity and strength of the Xingan Animal Husbandry Bureau.

Jingdezhen Refrigerator Compressor Plant Project

Partners: Huayi General Electric Company, Kirkby Engineering (Australia)
Focus: CFC-free Compressors
Funding: U.S. $9.5 million (Grant portion of soft loan)
Status/Schedule: Completed 1996

This project supported the construction of China's first CFC-free refrigerator/freezer air compressor plant, which was designed to produce one million energy-efficient, non-CFC refrigeration and freezer compressors per year. Kirkby Engineering provided expertise, technology, machine tools, and equipment to help the Huayi General Electric Company complete the plant.

Kunming Sewage Treatment Project

Partners: Kunming Municipal and Public Utility Bureau, BHP Engineering
Focus: Sewage Treatment
Funding: U.S. $1.6 million (Grant portion of soft loan)
Status/Schedule: Initiated 1995

The project designs and builds the Kunming Sewage Treatment Plant in Yunnan Province, which will boost capacity to 100 million liters per day. This project is a part of the larger Kunming Sewage Master Plan, which aims to control water pollution and related problems in and around Dianchi Lake. Through these efforts, the plan hopes to revive the area's tourist value and decrease the health risks for the people of Kunming City, who depend on the lake for drinking water, seafood, irrigation, and recreation.

Local Coal Gasification Projects

Partners: Yingkou Municipal Gas Company, Henan Provincial Coal Industry Bureau, Huangshi Gas Company, Various Australian Suppliers
Focus: Coal Gasification
Funding: U.S. $27.5 million (Grant portion of soft loan)
Status/Schedule: Initiated 1994, Completed 1998

AusAID provided this soft loan to support the purchase of equipment from Warren Engineering Pty. Ltd. (Yingkou), Energy Equipment Pty./CMPS (Henan), F Pty. Ltd. Joint Venture (Henan), and Warman International (Huang Shi). The project's objective is to reduce indoor and outdoor air pollution emissions by supplying coal gas to households, hospitals, and possibly industrial facilities. Before the project, the households typically burned coal for domestic heating and cooking.

Mine Waste Management

Partners: Beijing General Research Institute for Mining and Metallurgy, China National Non-Ferrous Metals Corporation, ACIL/AGC Woodward-Clyde Consortium
Focus: Mining
Funding: U.S. $4.4 million (Grant)
Status/Schedule: Initiated 1993, Completed 1997

The goal of this project was to reduce environmental damage from the disposal of mine waste. The project established an Institute for Mine Waste Management Research, developed and tested research methods and guidelines for the rehabilitation of damaged areas, designed and implemented a mine waste management policy for the China National Non-Ferrous Metals Corporation, and wrote plans for the rehabilitation of existing tailing reservoirs.

More Energy Efficient Boiler Manufacture

Partners: Taiyuan Number 2 Boiler Works, Maxitherm Australia Pty. Ltd.
Focus: Boilers
Funding: U.S. $2.5 million (Grant portion of soft loan)
Status/Schedule: Initiated 1996, Completed 1997

The soft loan supported the manufacture of relatively fuel-efficient packaged boilers, by providing technology, training, machinery, and ongoing support.

Nationwide Environmental Education Course Number 2

Partner: China Environment Protection Foundation
Focus: Environmental Education

Funding: U.S. $1,950 (Grant)
Status/Schedule: Initiated 1996, Completed 1997

Funds were used to purchase training materials for this environmental education training course, which targets primary and middle school students. The course is nonprofit and is run by volunteer environmental experts.

Second Shanghai Sewerage Technical Review Panel

Partner: Shanghai Municipal Government
Focus: Wastewater
Funding: U.S. $115,000 (Grant)
Status/Schedule: Initiated December 1995, Completed March 1996

The World Bank was in the process of providing loans for a new wastewater outfall in Shanghai, which would be the largest in the world. This panel reviewed the design and construction of the project to help ensure that it would be carried out safely and effectively.

Shanghai Battery Recycling

Partners: Minproc (Australia)
Focus: Battery Recycling
Funding: U.S. $910,000 (Grant portion of soft loan)
Status/Schedule: Initiated April 1996, Targeted Completion 2000

The loan is for a new plant that recovers lead and some plastics from spent vehicle batteries. The plant, which is located in Shanghai, will process batteries from six provinces in eastern China.

Shanghai Environmental Master Plan Study

Partners: Shanghai Research Institute for Environmental Protection, World Bank, Kinhill-PPK SEMP Joint Venture
Focus: Urban Planning, Urban Management, Institutional Strengthening
Funding: U.S. $844,000 (Grant)
Status/Schedule: Initiated 1992, Completed 1996

The grant funded technical assistance and project management components of the World Bank's U.S. $527 million environmental project in Shanghai. The project included financial and policy initiatives and planning and management reforms, which were supported by an investment program for environmentally-oriented capital works and institutional strengthening.

Sichuan Urban Environmental Project and Chongqing Urban Environment Project

Partners: Sichuan Environmental Protection Bureau, World Bank, Ausino Engineering
Focus: Water Supply, Wastewater Management, Solid Waste
Funding: U.S. $147,000 (Grant)
Status/Schedule: Initiated 1995

This grant assists the design of a U.S. $800 million loan project by providing a sector review. The initial sector review examined water supply and wastewater management in a number of cities in Sichuan. Goals included: 1) enabling Sichuan municipalities to recover from past degradation of water and land resources; and 2) putting in place policies, practices, and institutions to facilitate and sustain the cost-effective provision of essential services. The sector review activities then were extended to fund an initial sector review in the Chongqing municipality. This sector review was required to identify key issues in the water, wastewater, and solid waste sectors, with the objective of working with local agencies to produce some provisional development strategies for these sectors.

Tarim Basin II

Partners: World Bank, Tarim Basin Water Resources Commission, MOFTEC, Chinese Ministry of Finance
Focus: Integrated Pest Management, Water Resources
Funding: U.S. $1.9 million (Grant)
Status/Schedule: Initiated 1998, Targeted Completion 2000

This project follows up on an earlier one. The project has three main goals: 1) to help poor minority farmers increase their incomes through sustainable irrigated agriculture development; 2) to introduce systems and mechanisms to help promote sustainable development and the sustainable management of water resources in the Tarim Basin; and 3) to partially restore the forests and pastures of the lower reaches of the Tarim River. The Australian portion of the project will support three sub-components: institutional development at the Tarim Basin Water Resources Commission; the preparation of a master plan for development in the lake catchment; and the implementation of integrated pest management practices (Source: *Chinabrief*, November 1998).

21st Century Urban Water Management Project

Partners: Chinese Ministry of Construction and United Nations Development Programme (UNDP)
Focus: Water Management
Funding: U.S. $600,000 (AusAid grant), U.S. $500,000 (UNDP grant)
Status/Schedule: Initiated 1997, Targeted Completion 1999

The project assists the Ministry of Construction in launching a National Program for Sustainable Urban Water Management in China and in developing the institutional capacity to implement it. The overall objective is to improve water and wastewater management by developing and demonstrating an effective process for institutional reform and the implementation of a water demand management strategy.

Wei Hai Sewage Treatment Plant

Partners: Environmental Protection Bureau of Wei Hai City, Overseas Projects Corporation of Victoria (Australia)
Focus: Sewage Treatment, Offshore Disposal
Funding: U.S. $1.4 million (Grant portion of soft loan)
Status/Schedule: Initiated 1992

This project has supported the construction of a sewage treatment plant that pre-treats water from the town and then disposes of it offshore, where the deep water and strong ocean currents are supposed to keep the environmental effects minimal. Planners have hoped that the project would improve human living conditions in the area and enable the aquatic ecosystems in the bay to rebound, which in turn would benefit the region's economy.

Xingtai Waste Water Treatment

Partners: Urban and Rural Construction Commission of Xingtai City, Hebei Construction Authority
Focus: Wastewater Treatment
Funding: U.S. $1.5 million (Grant portion of soft loan)
Status/Schedule: Initiated 1995, Completed 1999

The project constructed a wastewater treatment plant with a mean throughput capacity of 150,000 cubic meters per day. The city of Xingtai, Hebei Province (population 400,000) previously discharged its wastewater directly into the waterways in and around the city, which severely polluted the city's water source.

Zhangzhou Waste Water Treatment

Partners: Zhangzhou Public Utility Bureau, Overseas Projects Corporation of Victoria (OPCV, Australia)

Focus: Wastewater Treatment
Funding: U.S. $1.4 million (Grant portion of soft loan)
Status/Schedule: Completed early 1998

The project built a secondary sewage treatment plant with a capacity of 100,000 cubic meters per day, which treats partly-treated industrial waste flows that are released mainly from a sugar factory.

Zunyi Waste Water Treatment Plant

Partners: Zunyi Water Supply Company, OPCV (Australia)
Focus: Wastewater Treatment
Funding: U.S. $1.4 million (Grant portion of soft loan)
Status/Schedule: Initiated 1997, Targeted for Completion 2002

The project provides equipment and related services for a wastewater treatment plant to supply drinking water to Zunyi City.

Australian Centre for International Agricultural Research (ACIAR)

Web Address: http://www.aciar.gov.au/

Eucalypts and Groundwater: Managing Plantations to Avoid Resource Depletion and Environmental Detriment in China and Australia

Partners: Department of Natural Resources & Environment, Centre for Forest Tree Technology, Australia; University of Melbourne; CSIRO Land and Water; Research Institute of Tropical Forestry, China; South China Institute of Botany; and China Eucalypt Research Centre.
Focus: Forestry, Groundwater Resources
Status/Schedule: Initiated late 1990s

This project aims to gather crucial quantitative information for predicting the productivity and sustainability of eucalyptus plantations in southern China or northeastern Victoria. With the view that site hydrology and productivity are inseparably linked, this project will gather data from eucalyptus stands in southern China. Activities will include measuring stand water use under a range of site conditions and management options. The data gathered will be analyzed with the aid of stand growth and hydrological models developed from data arising from other sources. This study strategy will be applied to plantations in northeastern Victoria.

Integrated Control of Citrus Pests in China and Southeast Asia

Partners: University of Western Sydney, Hawkesbury; Guangdong Entomological Institute, China; Department of Agriculture, Agriculture Research Centre, Semongsk, Malaysia; Department of Agriculture, Entomology & Zoology Division, Thailand; National Institute of Plant Protection, Biological Control Research Center, Vietnam.
Focus: Pest Management
Status/Schedule: Initiated late 1990s

This project aims to reduce the use of broad spectrum pesticides in China and Southeast Asia by implementing sustainable integrated pest management (IPM) programs based on the use of petroleum spray oils. IPM focuses on minimizing the use of pesticides and maximizing the use of natural enemies while optimizing production yields and fruit quality. The researchers on this project will conduct experiments in seventeen locations throughout Southeast Asia to establish the efficacy and cost effectiveness of implementing IPM programs. Workshops will also be held in China. This current project is based on earlier trials in China and Australia that utilized petroleum spray oils to effectively control citrus pests.

Impact of Water Saving Irrigation Techniques in China

Partners: International Rice Research Institute (IRRI); International Water Management Institute (IWMI), Sri Lanka; Zhejiang Agricultural University, Department of Soil Science and Agricultural Chemistry, China; Wuhan University of Hydraulic and Electric Engineering, China
Focus: Water Conservation
Status/Schedule: Initiated late 1990s

Within the framework of the System Wide Initiative on Water Management (SWIM), scientists from IWMI and IRRI are collaborating with Chinese scientists to find ways to increase rice yields with less water by utilizing Water Saving Irrigation (WSI) techniques. Water conservation in rice production is particularly important for China, where level of access to fresh water is one of the lowest in Asia and still declining. In an effort to optimize the use of valuable water resources, this project will address some of the technical issues underlying the successful application of WSI techniques. These issues include the impact on fertilizer use, the financial costs and benefits to farmers, the implications of the eventual large-scale adoption of these techniques on water savings, and water productivity increases.

Improved Orchard Productivity and Water Use Efficiency Using Modern Irrigation and Tree Management Techniques in Northern China

Partners: Institute of Sustainable Irrigated Agriculture, Victoria; China Agricultural University; Beijing; Horticultural Research Institute
Focus: Forestry, Water Use, Irrigation
State/Status: Initiated late 1990s

ACIAR has supported research into irrigation and orchard tree management in northern China for nine years. Outcomes of these projects were highly relevant to many parts of northern China, and researchers recommended that a more comprehensive development project be undertaken. This project aims to promote the adoption of the outcomes of the previous irrigation research both within China and other countries. The project will demonstrate through commercial scale in four major fruit growing areas and conduct training programs for farm managers and extension staff. Australian scientists will produce and test a computer-based model of tree and fruit development, irrigation, salinity, and nutrient losses that will form the basis of an expert system that will address a multitude of complex problems confronting Australia's orchard industry.

Improvement of IPM of Brassica Vegetable Crops in China and Australia

Focus: Pest Management
Partners: University of Queensland, Department of Entomology, Australia; Queensland Department of Primary Industries, Australia; Zhejiang University, Department of Plant Protection, China; Hunan Agricultural University, China; Zhejiang Academy of Agricultural Sciences, China; Zhejiang Department of Agriculture, China
Status/Schedule: Initiated late 1990s

Brassica crops are highly susceptible to insect damage and growers have attempted to control the pests with large amounts of chemical sprays. In this project, a continuation of earlier ACIAR research, scientists will further refine regimes of integrated pest management that significantly reduce the need to spray by studying the major factors affecting pest numbers in brassica crops and the role of beneficial organisms (parasitoids, predators, and pathogens) in suppressing pest numbers. Project activities include the measuring the impact of major pests on crop yield and quality loss; investigating how to modify insecticide regimes to promote the use of 'soft' insecticides; and minimizing the amounts applied. In order to promote wider acceptance of IPM in brassica production, the project will also evaluate different pest management regimes.

Priorities for Public Investment in Chinese Agriculture

Partners: Australian National University, National Centre for Development Studies, University of Adelaide, Department of Economics, Australia; Chinese Academy of Agricultural Sciences, Institute of Agricultural Economics; State Planning Commission, Economic Research Institute, China; International Food Policy Research Institute, USA. (Commissioned organization)
Focus: Investment
Status/Schedule: Initiated late 1990s

This project will undertake a series of policy research reports to provide national and regional policy makers in China with information to evaluate the impact of public investment in different sector, and future priorities for investment. The goal of this research is to help guide the Chinese government in determining appropriate levels of investment in agricultural research, particularly to determine which sub-sectors (cereal crops, cash crops, animals, or freshwater fisheries) deserve the greatest investment. Moreover, the study will identify which agro-ecological zones hold the most promising investment for both production increases and poverty alleviation. These studies will also help Chinese officials set the levels of investment in agriculture in relation to other sectors of the economy.

Canada

Note: All grant values are converted from Canadian dollars to U.S. dollars using the exchange rate of C $1 = U.S. $0.675, the market rate on October 14, 1999 at 2:30 PM EDT.

Canadian International Development Agency (CIDA)

Web Address: http://www.acdi-cida.gc.ca/index.htm

Applying Economic Research Institute Linkages

Partner: International Trade Research Institute
Focus: Economic Reform
Funding: U.S. $3.3 million (Grant)
Status/Schedule: Initiated 1992, Targeted Completion 1997

The project supported cooperative research between selected Canadian and Chinese applied economic research institutes. The research focused on areas of mutual interest, including environmental protection.

Assistance to Open Cities—Phase II

Partners: Special Economic Zones Office (China), Federation of Canadian Municipalities
Focus: Urban Management
Funding: U.S. $5.4 million (Grant)
Status/Schedule: Initiated 1993, Completed 1999

This program consists of two phases. Phase one trained Chinese bureaucrats and policymakers in urban management and environmental issues. Phase two of this project focused on urban management issues related to environmental protection and trade/investment. Training programs included seminars in China and Canada, study tours in Canada, and courses conducted at Nankai University (Tianjin) and the Minhang Cadre Training Center (near Shanghai).

Canada-China Cooperation Project in Cleaner Production

Partners: State Economic and Trade Commission (SETC), National Environmental Protection Agency (now SEPA), Coopers and Lybrand Consulting, SNC Lavalin Environment, ESSA Technologies
Focus: Cleaner Production

Funding: U.S. $7.1 million (Grant)
Status/Schedule: Initiated 1996, Targeted Completion 2001

This project attempts to help position Canadian firms for participation in World Bank environmental protection and industrial restructuring investments in the Huai River Basin. It does so by helping Chinese authorities and companies to apply cleaner production techniques at two locations in the Huai River basin. The project also aims to help improve the capacity of SETC and SEPA to promote the use of cleaner production technologies in the chemical and light industry sectors.

China Council for International Cooperation on Environment and Development (CCICED)

Partners: National Environmental Protection Agency (now SEPA), Simon Fraser University
Focus: Policy
Grant: U.S. $6.7 million
Status/Schedule: Initiated 1992

This project attempts to help China formulate policies that recognize the crucial linkages between environmental sustainability and economic and social development. It supports the CCICED, which brings together high-level experts and policymakers from China and abroad. The group drafts policy recommendations that are given directly to a senior representative of China's State Council. To help formulate these policy recommendations, the council has seven working groups that explore specific issues more in-depth. The Working Group categories include: Energy Strategy and Technology, Pollution Control, Environmental Economics, Protection of Biodiversity, Trade and Environment, Sustainable Agriculture, Cleaner Industrial Protection, and Transportation and Environment. For more information, please visit the website at: http://www.harbour.sfu.ca/dlam/ is the web address for CCICED.

Clean Coal Technology Transfer

Partners: Chinese Ministry of Coal Industry (now State Coal Industry Bureau)
Focus: Coal
Grant: U.S. $7.4 million
Status/Schedule: Initiated 1998

This CIDA project aims to help China's State Coal Industry Bureau accelerate the use of power generation technologies that pollute far less than traditional coal fired plants. The project activities to attain this goal include building a training center, constructing a pilot project, offering technical assistance, and funding training, seminars, workshops, study tours, and practical attachments in Canada and China.

Dam Safety Monitoring and Management Project

Partners: Chinese Ministry of Water Resources, S.M. Group International Inc.
Focus: Dams
Funding: U.S. $5.4 million (Grant)
Status/Schedule: Initiated 1996, Completed 1999

This CIDA project attempts to enable its Chinese partner organizations to develop the ability to implement a comprehensive dam safety program. The project helps to bring dam safety policies and standards up to a level of consistency with international norms. Moreover, the project activities attempt to give Chinese oversight institutions the ability to enforce dam safety and design monitoring systems for ten dams in China.

Electric Power Research Institutes, Phase II

Partners: Chinese Ministry of Electric Power, British Columbia Hydro International
Focus: Electric Power

Funding: U.S. $3 million (Grant)
Status/Schedule: Initiated 1994, Completed 1997

The project aimed to improve the capacity of the Ministry of Electric Power's research institutes. The institutes received state-of-the-art technology and training in all elements of electric power systems research, a portion of which addresses mitigating the environmental effects of energy generation and transmission. The principal activities were seminars in China, technical missions to Canada, training courses in Canada, and specific high-technology technical assistance and cooperative research.

Energy Efficiency in Buildings Project

Partners: Chinese Ministry of Construction, Soprin/ADS International
Focus: Energy Efficiency
Funding: U.S. $5.7 million (Grant)
Status/Schedule: Initiated 1996, Targeted Completion 2001

The project uses Canadian technologies to help China's Ministry of Construction develop energy efficiency standards for buildings. The project supports energy efficiency pilot projects for selected building types and climates. It also introduces a comprehensive management system and incentive program to promote energy conservation. The project's overall goal is to help the civilian building sector achieve an energy saving rate of fifty percent by the year 2000 in the cities of Beijing and Shanghai and in Liaoning and Guangzhou Provinces. If achieved, this actually would lower carbon dioxide emissions despite these areas' steady increase in developed land, according to project planners. For this project Canada is providing technical assistance, training, workshops, seminars, study tours, "practical attachments" in China and Canada, collaborative research, and other unspecified activities.

Hebei Dryland Project

Partners: Ministry of Agriculture, Hebei Academy of Agriculture and Forestry Science
Focus: Agriculture
Funding: U.S. $6.6 million (Grant)
Status/Schedule: Initiated 1989, Targeted Completion 2001

The project sends agricultural scientists, training, and equipment to China and gives selected Chinese scientists the opportunity to work in Canada for a short time. The goal is to improve dry-land agricultural management in the Hebei Lowland Plain and thus to increase the efficiency of water use, improve soil and water quality, and build farming profitability.

As of April 1997, the project had put in place new irrigation methods that reduce water consumption by thirty percent without decreasing yields. It also introduced balanced fertilization practices that significantly decrease fertilizer use and the quantity of excess nitrates in the soil and groundwater. In addition, by April 1997, GIS applications and the economic analysis of land-use planning and community development had been completed, minimum tillage applications had been introduced, and twenty scientific publications had been completed.

Jiangsu Applied Managerial Training and Protection for Small and Medium Enterprises (SMEs)

Partners: Ministry of Foreign Trade and Economic Cooperation (MOFTEC), Foundation of International Training, and the following agencies in Jiangsu Province: Council on Foreign Trade and Technology (COFTEC), Environmental Protection Bureaus, and the Bureau of Township Village Enterprises
Focus: Policy, Enterprise Management
Funding: U.S. $3.4 million (Grant)
Status/Schedule: Initiated March 1998, Targeted Completion 2003

Jiangsu's Small and Medium Enterprises (SMEs) are positioned for growth and will damage the environment seri-

ously if they expand unregulated. In response, this CIDA project has three goals. First, to work directly with both SMEs and the provincial government to improve the management and economic performance of SMEs. The second goal is to help provincial authorities bring these enterprises under their jurisdiction with regard to environmental protection. The third goal is to develop pilot programs that will propagate improved environmental compliance among SMEs in the province.

Kunming Horticulture Exhibition—Trees for Life Canada

Partners: International Co-operation for Children—Trees for Life Canada, Trees for Life China
Focus: Environment
Funding: U.S. $52,872 (Grant)
Status/Schedule: Initiated 1998, Completed 1999

The purpose of this project was to support reforestation and enhanced awareness of the importance of trees in order to contribute to environmentally sustainable development in China. It involved the establishment of a booth during the opening weeks of the Kunming International Horticulture Exposition to promote environmental awareness; the planting of 100,000 trees; and the launching of the 1999 Trees for Life "Grow a Tree" Program with schoolchildren in Yunnan Province.

Oil and Gas Technology Transfer Program

Partners: China National Petroleum Corporation, Nova Gas/D&S International
Focus: Oil, Gas
Funding: U.S. $19.6 million (Grant)
Status/Schedule: Initiated 1994, Targeted Completion 2000

The project helps China to optimize the recovery of its oil and gas resources. The project has two objectives. The first is to help selected petroleum institutions and research centers improve their analysis and research capabilities in the fields of oil and natural gas development. The second objective is to enhance CIDA's long term planning and programming ability in China by conducting a petroleum sector review.

Public Sector Reform Program

Partner: Ministry of Foreign Trade and Economic Cooperation (MOFTEC)
Focus: Economic Development and Reform
Funding: U.S. $2.7 million (Grant)
Status/Schedule: Initiated 1998, Targeted Completion 2003

The purpose of this project is to enable key Chinese public sector decision-makers to be directly exposed in a timely fashion to a broad range of Canadian expertise, ideas, and experience in social, trade, financial, and other strategic policy areas, including the environment. This will be accomplished by bringing Canadian experts to China or by bringing Chinese decision-makers to Canada.

South China Power Studies, Phase II

Partners: Chinese Electric Power Planning and Engineering Institute, Canada China Electric Power Consultants
Focus: Electric Power
Funding: U.S. $5.3 million (Grant)
Status/Schedule: Initiated 1994, Completed 1999

This second phase of studies utilized the power planning techniques that were transferred in the first phase. Its studies focused on power planning up to the year 2015 for Yunnan, Guangxi, Guizhou, Guangdong, and Sichuan Provinces. The project included hands-on training, seminars, and workshops for local personnel. These activities

focused on planning and implementing major electricity developments, system transmission networks, and regional interconnections. Some portion of the project also focused on mitigating environmental damage from energy generation and transmission.

Strategic Energy Planning for Southern China

Partners: Chinese Ministry of Electric Power, Canada China Electric Power Consultants
Focus: Electric Power
Funding: U.S. $9.7 million (Grant)
Status/Schedule: Initiated 1995, Completed 1999

This project focused on technology transfer to help China import appropriate processes for the development of power and coal in South China. It introduced a market-based approach and according to its architects will operate in an economically, environmentally, and socially sustainable energy management framework. Canada helped China with planning and research, providing China and Canada-based training, furnishing some equipment and materials, and offering management services, monitoring, and evaluation.

Sustainable Resource Development in the Tarim Basin

Partners: China National Petroleum Corporation, Xinjiang Uygur Autonomous Region
Focus: Petroleum, Water Resources
Status/Schedule: Initiated fall of 1997

The goal of the project is to help its two partners develop a regional strategy for developing the petroleum resources of the Tarim Basin in an ecologically sustainable manner. The optimum allocation and use of water resources is a particular focus of the project. The project has two primary objectives: First, to help protect the environment in areas exploited for petroleum exploration and development and second, to improve the Xinjiang region's water and hydro-environmental resources and to develop a strategic plan for water supply to the petroleum industry, while taking into account the regional macro economy.

Denmark

Danish Government

Wastewater Treatment and Wind Energy

Focus: Wastewater Treatment, Wind Energy
Funding: U.S. $50 million (Loan)
Status/Schedule: Initiated sixteen projects in 1994; Completed ten projects in 1998; Six projects continue

Denmark has completed ten projects focusing on wastewater treatment and wind energy. The projects were conducted in various locations, notably in Inner Mongolia and Xinjiang and Guangdong Provinces. Six additional wastewater treatment and wind energy projects were ongoing as of November 1998 (Source: *Chinabrief*, November 1998).

Wastewater Treatment and Wind Energy

Focus: Wastewater Treatment, Wind Energy
Funding: U.S. $10 million (Loan)
Status/Schedule: Awaiting final approval as of November 1998

Four Danish projects focusing on wastewater treatment and wind energy were awaiting approval as of November 1998 (Source: *Chinabrief*, November 1998).

Wind Energy

Partner: Danida (Danish bilateral aid agency)
Focus: Wind Energy
Funding: Up to U.S. $100 million (Loan)
Status/Schedule: Initiated 1998, Targeted Completion 2002

In April 1998, Denmark and China agreed to develop a comprehensive program of wind energy projects, with a total loan value of up to U.S. $100 million. Some limited technical assistance grants also were offered by Danida, the Danish bilateral aid agency (Source: *Chinabrief*, November 1998).

EUROPEAN UNION

Note: All grant values are converted from European to U.S. currency using the exchange rate of 1 Euro = U.S. $1.078, the market rate on October 14, 1999 at 7:19 PM EDT.

European Union-China Environmental Management Cooperation Program

Partners: China International Center for Sustainable Development (Beijing), Ministry of Foreign Trade and Economic Cooperation, State Science and Technology Commission (now Ministry of Science and Technology)
Focus: Policy, Environmental Management, Planning, and Enforcement
Funding: U.S. $14 million (Grant)
Status/Schedule: Initiated 1998

The project attempts to build capacity and influence local and municipal governments to adopt more sustainable development practices. These goals will be done in project activities by raising awareness, conducting forums, providing management and planning tools, and breaking down barriers and building networks between cities and government institutions in China. This EU funded project also attempts to influence industry by organizing conferences, providing training workshops on environmental management systems, conducting training courses, and implementing pilot programs for the implementation of environmental management techniques and environmental protection technologies. The funding for this project was still being negotiated as of February 1998.

The project has four salient objectives: 1) to help integrate environmental protection into sectoral policies, private industry, and public sector investment; 2) to further integrate environmental and sustainability considerations into public sector planning decisions and private industry; 3) to develop China's environmental management, planning, and enforcement capacity; and 4) to build cooperation between China and the European Union.

European Union-China Honghe Environment Protection and Poverty Alleviation Project, Pilot Phase

Partners: Yunnan Provincial Bureau of Foreign Trade and Economic Cooperation, Yunnan Poverty Alleviation Office, Yunnan Environmental Protection Bureau
Focus: Poverty, Agriculture, Micro-finance
Funding: U.S. $1.1 million (Grant)
Status/Schedule: Initiated October 1997, Completed 1999

The project had three objectives: 1) to reduce poverty and improve environmental protection in Yunnan Province; 2) to encourage the use of participatory and people-centered techniques to reduce poverty and protect the environment; and 3) to help minority communities develop entrepreneurial activities and work with government agencies on an equal footing. The project was designed to fund technical assistance from the Center For Integrated Agricultural Development, provide training, develop area plans, and provide topographical equipment and vehicles. It also

furnished micro-credit for chicken and pig raising, tree plantations, cash crop production projects, and numerous other types of projects.

Liaoning Integrated Environmental Program

Focus: Clean Production, Waste Minimization, Recycling, Energy Efficiency, Alternative Energy
Funding: U.S. $40 million (Grant)
Status/Schedule: Initiated 1998, Targeted Completion 2003

This large project in Liaoning Province has three objectives: 1) to build environmental awareness and improve environmental planning, management, enforcement; 2) to promote cleaner production, waste reduction, recycling, energy efficiency, and alternative energy; and 3) to support economic and social restructuring.

The EU funded project includes eight core activities: 1) establishing a program office that is responsible for raising awareness and sharing information with the public and government institutions; 2) preparing an integrated master plan for the municipality of Shenyang; 3) improving the management of water resources and control of water pollution emissions in the Liao River basin; 4) improving air quality monitoring and management; 5) promoting the use of gas and formulating an improved energy policy; 6) promoting cleaner production through training, seminars, a Cleaner Production Center, and a previously established cleaner production revolving fund; 7) assisting industrial restructuring at the enterprise and sector level; and 8) promoting investment by surveying enterprises, providing policy advice, identifying constraints to investment, and fostering contacts with EU industry.

Federal Republic of Germany

Note: All Grant and loan values are converted from Deutsche Marks to U.S. dollars using the exchange rate of 1 DM = U.S. $0.5513, the market rate on October 14, 1999 at 2:30 PM EDT.

Federal Ministry for Economic Cooperation (Bundesministerium für Wirtschaftlich Zusammenarbeit und Entwicklung—BMZ)

Web Address: http://www.bmz.de/

Advisory Inputs for the Longkou and Lanzhou Coal-fired Power Plants

Focus: Power, Coal
Funding: U.S. $1.3 million (Loan)
Status/Schedule: Initiated June 1997

This Federal Ministry for Economic Cooperation (BMZ) technical cooperation project involves the disposal of coal ash, a waste product of heat generation. It uses the ash as a raw material to produce building blocks, and utilizes relatively low-impact dumping.

Advisory Services for the Introduction of International Environmental Standards

Partner: National Environmental Protection Agency (now SEPA)
Focus: Environmental Management
Funding: U.S. $1.4 million (Grant)
Status/Schedule: Initiated June 1997

This technical cooperation project pays for advisory services for the staff of government environmental institutions and consulting businesses that are involved in using ISO 14,000 management practices to reduce industrial environmental protection.

Afforestation with Fast-growing Tree Species

Focus: Forestry
Funding: U.S. $4.2 million (Grant)
Status/Schedule: Initiated June 1997

This technical cooperation project helps to produce ecologically stable forests. This BMZ funded project is part of China's national afforestation program.

Basic and Advanced Training in the Forestry Sector

Focus: Forestry
Funding: U.S. $2.8 million (Grant)
Status/Schedule: Initiated June 1997

This technical cooperation project aims to improve basic and advanced training in the forestry sector.

Biological Control of Forest-based Pests

Focus: Forestry, Pest Management
Funding: U.S. $3.4 million (Grant)
Status/Schedule: Initiated June 1997

According to a document furnished by the BMZ, this technical cooperation project develops mature methods to control forest-based pests.

Center for Power Station Technology and Energy Management in Xian

Focus: Power, Energy Management
Funding: U.S. $2.2 million (Grant)
Status/Schedule: Initiated June 1997

This BMZ technical cooperation project funds power engineering and energy management-related seminars and training activities.

CFC-free Technologies for the Refrigerator Industry

Focus: Ozone Depleting Substitutes
Funding: U.S. $550,000 (Grant)
Status/Schedule: Initiated June 1997

This technical cooperation project conducts conversion studies for up to ten refrigerator producers.

CIB III

Focus: Environmental Industry
Funding: U.S. $19 million (Loan)
Status/Schedule: Initiated 1997

This project extends a cash line of credit for financing environment-related investment. The target group is private sector enterprises and state-owned companies that have become incorporated. The project began accepting investor applications as of June 1997.

Coal-fired Power Plant in Tianjin (Yang Liu Qing)

Focus: Power, Coal
Funding: U.S. $72.8 million (Loan)

Status/Schedule: Initiated June 1997

This financial cooperation project involves two 300 MW units with slag tap-fired boiler firing systems. These units use slag as a material additive.

Coke-gas Purification in Beijing

Focus: Coke-gas Purification
Funding: U.S. $14.1 million (Loan)
Status/Schedule: Initiated June 1997

This financial cooperation project expanded the coke-gas purification facilities at the Beijing coking plant. This project increased gas supply to the area and reduced air pollution by lowering the combustion of coal.

Credit Program I

Partners: Export-Import Bank of China, Agricultural Bank of China
Focus: Environmental Industry
Funding: U.S. $36 million (Loan)
Status/Schedule: Initiated 1997

This loan extends a cash line of credit for financing environment-related investment. The target group is private-sector enterprises and state-owned companies that have become incorporated. The project began accepting loan applications as of June 1997.

Development and Implementation of Participatory Approaches in Agriculture and Forestry

Focus: Agriculture, Forestry
Funding: U.S. $2.2 million (Grant)
Status/Schedule: Initiated June 1997

This technical cooperation project includes local people in agricultural and forestry planning. The participatory planning approaches employed in this BMZ project also consider both ecological and economic principles.

Development of Concepts for the Appropriate Supply of Energy

Focus: Ozone, Energy
Funding: U.S. $400,000 (Grant)
Status/Schedule: Initiated June 1997

This technical assistance project provides support for the implementation of the Montreal Protocol in China.

Forest Fire Protection

Focus: Forestry
Funding: U.S. $2.2 million (Grant)
Status/Schedule: Initiated June 1997

This technical cooperation project gives foresters fire-fighting training and provides for the transfer of fire-fighting technologies.

Gasifiable Coal Briquetting

Focus: Coal
Funding: U.S. $300,000 (Grant)
Status/Schedule: Initiated June 1997

This technical assistance project is a preparatory study on gasifiable coal briquetting, which the BMZ calls "environ-

mentally friendly energy generation."

Greenhouse-effect Reduction Study

Focus: Climate Change
Funding: U.S. $390,000 (Grant)
Status/Schedule: Initiated June 1997

This technical cooperation project identifies options for carbon dioxide reduction. It is part of a larger DM 5 million (U.S. $2.8 million) project that is being carried out in several countries. The project is related to the UN Convention on Climate Change.

Heat Technology and Environmental Protection for Thermal Power Stations in Xian

Focus: Power, Coal
Funding: U.S. $3.6 million (Grant)
Status/Schedule: Completed December 1995

This technical cooperation project improved combustion control so that the power stations in Xian use less coal and emit a smaller quantity of pollutants.

Lhasa Leather Factory

Focus: Sewage, Recycling
Funding: U.S. $8.5 million (Grant)
Status/Schedule: Initiated June 1997

This BMZ technical cooperation project based in Tibet has targets in three areas: 1) enhancing economic efficiency in an environmentally and socially compatible manner; 2) constructing a sewage treatment facility; and 3) constructing a chromium recycling plant.

Modern-Technology Power Plant

Focus: Power, Coal
Funding: U.S. $78.2 million (Loan)
Status/Schedule: Initiated 1997

This financial cooperation project constructs a coal-fired power plant that is to be highly efficient and lowers emissions. The site of the plant was to be selected as of June 1997.

Production and Management of the Miyun Lake Watershed, Hebei/Beijing

Focus: Water
Funding: U.S. $2.2 million (Grant)
Status/Schedule: Initiated June 1997

This technical cooperation project focuses on conserving soil and water resources and improving rural income within the Miyun lake watershed.

Promoting the Dongying Environmental Agency

Focus: Monitoring
Funding: U.S. $2.8 million (Grant)
Status/Schedule: Initiated June 1997

This technical cooperation project helps the Dongying environmental protection office to systematically register

environmental burdens in their area. It also funds a pilot pollution reduction program for three polluters.

Promoting the International Environmental Protection Agency within the State Council, Beijing

Partners: International Environmental Protection Agency, State Council, Beijing
Focus: Planning
Funding: U.S. $300,000 (Grant)
Status/Schedule: Initiated June 1997

This technical cooperation project attempts to encourage Chinese authorities in Beijing to consider environmental protection and environmental impacts more strongly when formulating plans for future development.

Promoting the National Environmental Protection Agency in Beijing

Partner: National Environmental Protection Agency (now SEPA)
Focus: Capacity Building, Industrial Pollution
Funding: U.S. $1.4 million (Grant)
Status/Schedule: Initiated June 1997

This technical cooperation project supports the consolidation of industrial environmental protection concepts, information systems, and training curricula.

Promotion of the Tianjin Environmental Agency

Focus: Environmental Management
Funding: U.S. $1.7 million (Grant)
Status/Schedule: Initiated June 1997

This technical cooperation project supports the development of corporate an environmental management system that meets ISO 14,000 standards.

Reducing Harmful Emissions from Thermal Power Stations

Focus: Power, Coal
Funding: U.S. $3.0 million (Grant)
Status/Schedule: Initiated June 1997

This grant purchases a mobile laboratory for the Chinese power utilities and provides training for power plant personnel. Financing of the mobile laboratory van is provided by Germany's Credit Agency for Reconstruction (Kreditanstalt für Wiederaufbau).

Refuse Disposal in Beijing

Focus: Municipal Waste
Funding: U.S. $21.5 million (Loan)
Status/Schedule: Initiated June 1997
The loan is for the construction of two sanitary landfills, two transfer stations, and one composting facility for Beijing Municipality.

Rehabilitation of the Banshan Power Station

Focus: Power, Desulfurization
Funding: U.S. $33.1 million (Loan)
Status/Schedule: Initiated 1996

This financial cooperation project retrofits the Banshan power plant with a desulfurization system that reduces sulfur dioxide emissions. Competitive bidding on this project was ongoing as of 1996.

Rehabilitation of the Beijing Power Station

Focus: Power, Desulfurization
Funding: U.S. $23.9 million (Loan)
Status/Schedule: Initiated 1997

This financial cooperation project retrofits the power plant with a desulfurization system that reduces sulfur dioxide emissions. Competitive bidding on this project was ongoing as of 1997.

Rehabilitation of the Chongqing Power Station

Focus: Power, Desulfurization
Funding: U.S. $35.8 million (Loan)
Status/Schedule: Initiated 1996

This financial cooperation project retrofits the power plant with a desulfurization system that reduces sulfur dioxide emissions. Competitive bidding on this project was ongoing as of 1996.

Rehabilitation of Forest-fire Areas

Focus: Forestry
Funding: U.S. $2.2 million (Grant)
Status/Schedule: Initiated June 1997

This technical cooperation project focuses on the creation of a silvicultural basis to promote ecologically-oriented reforestation.

Rehabilitation of Micro-hydropower Plants in Tibet

Focus: Micro Hydropower
Funding: U.S. $2.8 million (Grant)
Status/Schedule: Initiated June 1997

This technical cooperation project funded by BMZ rehabilitates existing micro-hydropower installations and helps to establish self-sustaining producer/consumer associations.

Resource Protection in Sichuan Province Nature Reserves (Giant Panda Protection)

Focus: Nature Reserves
Funding: U.S. $2.4 million (Grant)
Status/Schedule: Initiated June 1997

This technical cooperation project helps to protect the habitat of the Giant Panda by improving nature reserve security.

Sewage Disposal in Guangzhou City

Focus: Sewage
Funding: U.S. $10.2 million (Loan)
Status/Schedule: Initiated June 1997

Funds are for the construction of a municipal sewage treatment facility with a capacity of 220,000 cubic meters per day.

Sewage Disposal in Hangzhou City

Focus: Sewage
Funding: U.S. $12.7 million (Loan)
Status/Schedule: Initiated 1997

This project, which focuses on the rapidly growing capital city of Zhejiang Province, expands the existing municipal sewage treatment facility's mechanical treatment from a capacity of 400,000 cubic meters per day to 600,000 cubic meters per day. It also expands the plant's biological treatment capacity to 400,000 cubic meters per day. Competitive bidding on this project was ongoing as of June 1997.

Sewage Disposal along the Huai River

Focus: Sewage
Funding: U.S. $33.1 million (Loan)
Status/Schedule: Initiated June 1997

The loan supports the construction of municipal sewage treatment facilities within the Huai watershed.

Sewage Disposal in Qingdao City

Focus: Sewage, Water Supply
Funding: U.S. $16.0 million (Loan)
Status/Schedule: Initiated 1997

Expands the existing drinking water supply system from 75,000 cubic meters per day to a capacity of 250,000 cubic meters per day. Moreover, this BMZ loan funds the construction of a municipal sewage treatment facility that can treat 300,000 cubic meters per day. Competitive bidding on this project was ongoing as of June 1997.

Sewage Disposal in Qingdao City

Focus: Sewage
Funding: U.S. $13.8 million (Loan)
Status/Schedule: Initiated June 1997

This project builds a municipal sewage treatment facility with a capacity of 100,000 cubic meters per day and a fractional industrial water treatment capacity of 40,000 cubic meters per day.

Sewage Disposal in Qingdao City

Focus: Water Supply
Funding: U.S. $5.8 million (Loan)
Status/Schedule: Initiated June 1997

This third BMZ sewage project in Qingdao City expands the drinking water supply by 50,000 cubic meters per day.

Sewage Disposal for Towns in Shandong Province

Focus: Sewage
Funding: U.S. $26.2 million (Loan)
Status/Schedule: Initiated 1996

This project builds four municipal sewage treatment facilities that possess capacities of 200,000 cubic meters per day, 80,000 cubic meters per day, and 2 x 40,000 cubic meters per day. Competitive bidding on this project was taking place as of mid-1996.

Sewage Disposal in Yangtai City

Focus: Sewage
Funding: U.S. $12.7 million (Loan)
Status/Schedule: Initiated June 1997

Funds are provided for the construction of a municipal sewage treatment facility with a capacity of 250,000 cubic meters per day. Its fractional industrial water treatment capacity is 40,000 cubic meters per day.

Special Energy Program

Focus: Renewable Energy
Funding: U.S. $3.0 million (Grant)
Status/Schedule: Initiated June 1997

This program helps to promote the use of renewable energy sources in China.

Substitution of CFC/FC in the Refrigeration Sector

Partner: National Environmental Protection Agency (now SEPA)
Focus: ODS Substitutes
Funding: U.S. $2 million (Grant)
Status/Schedule: Completed January 1996

This technical cooperation project initiated CFC/FC substitution in China's refrigeration industry and supported a conversion study.

Sustainable Development in the Mountain Region of Jiangxi Province

Focus: Deforestation
Funding: U.S. $3.3 million (Grant)
Status/Schedule: Initiated June 1997

This technical cooperation project protects natural resources that have been degraded by massive deforestation and inappropriate land-use techniques.

Town-gas Supply in Harbin

Focus: Gas
Funding: U.S. $13 million (Loan)
Status/Schedule: Initiated June 1997

This financial cooperation project improves air quality by substituting gas for the burning of coal. The gas is produced via the pressure-assisted gasification of coal.

Training Center for Industrial Pollution Control

Focus: Industrial Pollution
Funding: U.S. $2.2 million (Grant)
Status/Schedule: Initiated June 1997

This technical cooperation project supports a joint German-Chinese environmental technology center.

Tropical Forest Protection in Hainan Province

Focus: Forest Protection
Funding: U.S. $2.9 million (Grant)
Status/Schedule: Initiated June 1997

This technical cooperation project demonstrates systems for the protection and sustainable management of tropical forests on Hainan Island.

Tropical Forest Protection, Yunnan Province

Focus: Forest Protection
Funding: U.S. $3.6 million (Grant)
Status/Schedule: Initiated June 1997

This technical cooperation project establishes an integrated system for protecting and managing the tropical forests in southern Yunnan Province in a sustainable manner.

Turbine Modernization

Focus: Coal, Turbines, Power
Funding: U.S. $33.1 million (Loan)
Status/Schedule: Initiated 1996

This financial cooperation project modernizes turbines and boiler plants to improve performance and efficiency, which in turn reduces coal consumption and pollution emissions. Competitive bidding on this project was ongoing in 1996.

Water Supply in Zunyi

Focus: Water Supply
Funding: U.S. $4.4 million (Loan)
Status/Schedule: Initiated June 1997

This project expands Zunyi's drinking water supply from 80,000 cubic meters per day to 150,000 cubic meters per day.

Wind Park I

Focus: Wind Energy
Funding: U.S. $6.3 million (Loan)
Status/Schedule: Initiated 1996

This financial cooperation project expands energy supply in an emission-free manner by building wind power plants in Hainan and Zhejiang Provinces. The project began in Hainan in 1996 but is still in the process of taking competitive bids in Zhejiang Province.

Wind Park II

Focus: Wind Energy
Funding: U.S. $10.5 million (Loan)
Status/Schedule: Initiated 1997

This financial cooperation project builds a wind park for power production. Competitive bidding was underway for this project as of 1997.

Wind Park III

Focus: Wind Energy
Funding: U.S. $8.3 million (Loan)
Status/Schedule: Initiated June 1997

This financial cooperation project builds a wind park for power production.

Wind and Solar-Energy Usage in Central Mongolia

Focus: Wind Energy, Solar
Funding: U.S. $6.9 million (Grant)
Status/Schedule: Completed July 1997

This BMZ financed technical cooperation project helped to electricity design systems that use renewable energy sources.

Yang Shu Pu Cogenerating Facility

Focus: Power, Heat
Funding: U.S. $59.5 million (Loan)
Status/Schedule: Initiated June 1997

This financial cooperation project involves the substitution and expansion of combined heat and power generation.

GERMAN TECHNICAL COOPERATION (DEUTSCHE GESELLSCHAFT FÜR TECHNISCHE ZUSAMMENARBEIT—GTZ)

Web Address: http://www.gtz.de/

Environment-oriented Advisory Services for Enterprises

Focus: Cleaner Production, Hazardous Waste Management
Funding: U.S. $5 million (Grant)
Status/Schedule: Initiated 1999

This German Technical Cooperation (GTZ) technical assistance project targets production processes, hazardous waste management, and environment related advisory services in Zhejiang Province (Source: *Chinabrief*, August-November 1999).

Environmental and Resource Protection

Focus: Agriculture
Funding: U.S. $5.5 million (Grant)
Status/Schedule: Initiated 1999

This GTZ funded technical assistance project provides research and training in environmentally sound nitrogen fixing and for other topics on which agreement had not been reached as of summer 1999 (Source: *Chinabrief*, August-November 1999).

Rural Infrastructure and Vocational Training in Tibet

Focus: Micro-Hydropower, Agriculture
Funding: U.S. $4.4 million (Grant)
Status/Schedule: Initiated 1999

A detailed plan for this technical assistance project had not been finalized as of summer 1999, but the project is expected to focus on 1) providing vocational training in agriculture and crafts and 2) repairing and improving irrigation systems and micro-hydropower plants (Source: *Chinabrief*, August-November).

Japan

Note: All Grant and loan values are converted from Japanese Yen to U.S. dollars using the exchange rate of 1 Japanese Yen = U.S. $0.009316, the market rate on October 14, 1999 at 2:30 PM EDT.

Japan International Cooperation Agency (JICA)

Web Address: http://www.jica.go.jp/Index.html

Beijing Research Center for Water Pollution and Reuse

Partner: State Science and Technology Commission (now Ministry of Science and Technology)
Focus: Water Pollution
Status/Schedule: Initiated 1992, Completed 1997

The project provided technical assistance regarding the filtration and removal of chemical contaminants in water (Source: *China Development Briefing*, January 1997).

China Energy Conservation Training Center, Dalian City

Partners: Dalian Economic Commission, State Economic and Trade Commission
Focus: Energy Conservation
Status/Schedule: Initiated 1992, Completed 1997

The training center focuses its work on energy conservation technologies for industrial enterprises and power stations in the northeastern coastal city Dalian (Source: *China Development Briefing*, January 1997).

Environmental Model City Project

Focus: Air Pollution, Water Pollution, Energy Conservation, Recycling
Status/Schedule: Initiated September 1997

Chongqing, Dalian, and Guiyang are the three cities selected for participation in this JICA funded project. In these cities efforts will be made to strengthen environmental regulations and to provide Japanese technical assistance grants and soft loans. The two nations hope that introducing advanced technologies and systems in these cities will inspire other Chinese cities to adopt them as well. Primary efforts involve preventing air pollution, improving water quality, combating global warming by conserving energy, and building industries and local support systems for the recycling of gypsum, fertilizer, and other by-products of emissions desulfurization.

Environmental Protection Center, Beijing

Partner: National Environmental Protection Agency (now SEPA)
Focus: Monitoring
Status/Schedule: Initiated 1996, Targeted Completion 2001

This technical assistance grant provides training in environmental monitoring. The training will take place at the Japan-China Friendship Environmental Conservation Center in Beijing.

Forest Tree Improvement, Hubei

Partner: Chinese Ministry of Forestry (now State Forestry Bureau)

Focus: Forestry
Status/Schedule: Initiated 1996, Targeted Completion 2001

This technical assistance program focuses on genetic preservation and propagation to aid reforestation in Northwest Hubei (Source: *China Development Briefing*, January 1997).

Forestry Development, Fujian Province

Partner: Fujian Forestry Department
Focus: Forestry
Status/Schedule: Initiated 1991, Targeted Completion 1998

This JICA project focused on reforestation technologies and on forestry research and management (Source: *China Development Briefing*, January 1997).

Japan-China Comprehensive Forum on Environmental Cooperation

Partners: Unspecified Japanese and Chinese Government Agencies, Local Municipalities, NGOs, and Specialists
Focus: Air Pollution, Water Pollution, Technology, Public Education
Status/Schedule: Initiated 1995

This project, which is co-sponsored by China and Japan, brings together individuals from the public and private sector to foster a heightened, far-reaching exchange of views and opinions on themes in environmental cooperation. As of 1998, two forums had taken place. The second, in Tokyo in November 1997, targeted the topics of environmental pollution, pollution prevention, environmental technology, and public awareness programs.

Japan-China Friendship Environmental Protection Center

Partners: Japan's Ministry of International Trade and Industry, Japan's Environment Agency, National Environmental Protection Agency of China (now SEPA)
Focus: Research, International Cooperation, Information Dissemination
Funding: U.S. $97.8 million (Grant)
Status/Schedule: Completed 1996

This joint Chinese-Japanese financed project led to the construction of the Japan-China Friendship Environmental Protection Center in Beijing. According to Zhang Kun, the Center's General Director, the Japan-Friendship Environmental Protection Center was built to promote effective environmental protection in China and to improve implementation of sustainable development. Moreover, this center aims to promote the friendship between Japan and China and international environmental cooperation. The eleven-story building is located on the Fourth Ring Road in Beijing. It houses environmental monitoring equipment, offices for government and non-governmental agencies, research facilities, a television production studio, research laboratories, conference facilities, and a residential building for visiting scholars and professionals.

Nationwide Environmental Information Network

Partner: Japan-China Friendship Environmental Conservation Center
Focus: Monitoring
Status/Schedule: Initiated September 1997

This project will attempt to establish a nationwide environmental information network. This network will be comprised of 100 installations, all of which will have a set of computers that are dedicated to the processing of environmental information. The hub of the network will be the Japan-China Friendship Environmental Conservation

Center in Beijing, which was built from 1992-1996 with JICA grant aid.

Ningxia Forest Protection Research

Partners: Ningxia Science and Technology Commission, Ningxia Forestry Bureau
Focus: Forest Protection
Status/Schedule: Initiated 1994, Completed 1999

This technical assistance project targets pest control and other forest protection-related research in a desert located in Ningxia Province (Source: *China Development Briefing*, January 1997).

The Overseas Economic Cooperation Fund (OECF)

Web Address: http://www.oecf.go.jp/index.htm

Beijing Sewage Treatment Plant Construction Project

Partners: Beijing Municipal Engineering Bureau
Focus: Sewage
Funding: U.S. $24.6 million (Loan)
Status/Schedule: Initiated 1988

The OECF loan supported the expansion of a pre-existing sewage treatment plant in Beijing and led to an increased capacity by 500,000 cubic meters per day.

Benxi Environmental Improvement Project I

Partners: Benxi Municipal People's Government
Focus: Air Pollution, Water Pollution, Water Supply, Monitoring
Funding: U.S. $38.3 million (Loan)
Status/Schedule: Initiated 1997

The project involved the construction of gas/heat/electricity plants and water supply facilities. It also enabled factories to purchase pollution control and monitoring equipment.

Benxi Environmental Improvement Project II

Partner: Benxi Municipal People's Government
Focus: Urban Environment, Air Pollution
Funding: U.S. $39.1 million (Loan)
Status/Schedule: Loan committed to the project in September 1997

This project, which is funded by the second such OECF loan to the region, is to construct gas supply facilities and to equip factories with pollution-control equipment in order to improve the environment in Benxi, Liaoning Province.

Dalian Water Supply System Rehabilitation Project

Partner: Ministry of Construction
Focus: Water Supply
Funding: U.S. $52.3 million

The project funds the construction of water supply facilities in Dalian City, Liaoning Province. These facilities will expand and improve the city's water supply system in order to meet the increasing demand for water. The capacity of the pumping station is 350,000 cubic meters/day.

Heilongjiang Songhua River Basin Environmental Improvement Project

Partner: Heilongjiang Provincial People's Government
Funding: U.S. $100.3 million (OECF loan)

This project is to construct sewage facilities and to take pollution control measures in factories in the major cities in the Heilongjiang Province in order to reduce pollution. Also, this project is to prevent air pollution, which can contribute to more effective utilization of resources.

Henan Panshitou Reservoir Construction Project

Partner: Henan Provincial Department of Water Resources
Funding: U.S. $64.1 million (OECF loan)

This project is to construct a multi-purpose rock-fill dam in the Panshitou area, located fifteen kilometers northwest of Hebei City, Henan Province.

Hohhot and Baotou Environmental Improvement Project

Partner: National Environmental Protection Agency (now SEPA)
Focus: Air Pollution, Monitoring, Gas, Investment
Funding: U.S. $145.6 million (OECF loan)
Status/Schedule: Initiated 1996, Completed 1997

This very large project was comprised of three parts. One portion of the loan supported the procurement of machinery and equipment for the expansion of the gas and heat supply systems in the two cities. The second portion of the loan was for environmental monitoring and research equipment for Baotou City. The third portion of the loan enabled the Export-Import Bank of China to extend long-term loans to non-public entities in either city that request funds to make environmental improvements to their facilities.

Huai River Henan Water Pollution Control Project II

Partner: Henan Provincial People's Government
Focus: Water Treatment
Funding: U.S. $47.1 million (Loan)
Status/Schedule: Loan committed in September 1997

The goal of the project is to construct sewage treatment plants and sewage pipeline networks in the major cities in the Henan Province and to implement water pollution control countermeasures in factories currently discharging pollutants, which violate environmental standards. The loan for this project represents OECF's second commitment in this region.

Hunan Yuanshui River Basin Hydropower Development Project

Partner: State Power Corporation of China
Funding: U.S. $168.1 million (OECF loan)

The aim of this project is to accelerate development of hydropower resources in Hunan Province by means of the construction of two concrete-gravity dam systems with power-generating capacities of 225MW and 240MW, respectively.

Jilin Song Liao River Basin Environmental Improvement Project

Partner: People's Government of Jilin Province
Funding: U.S. $121.8 million (OECF loan)

The goal of this project is to construct sewerage facilities and to take water pollution control measures in factories in the Songhua and Liao River basins located in Jilin Province in order to improve water quality.

Lanzhou Environmental Improvement Project

Partner: State Environmental Protection Agency (SEPA)
Funding: U.S. $71.7 million (OECF loan)
Status/Schedule: Initiated 1996

The purpose of the OECF-funded project is to abate air pollution from coal burning, to improve the water quality of the Yellow River, and to ensure a safe drinking water supply in Lanzhou City, Gansu Province. The project extended a gas pipeline, constructed more efficient heat-supply lines, built a wastewater treatment plant, and expanded the existing water treatment plants. The loan was also used to procure machinery and equipment for the project.

Liuzhou Environmental Improvement Projects I and II

Partner: National Environmental Protection Agency (now SEPA)
Focus: Air Pollution, Water Pollution, Urban Sanitation
Funding: U.S. $55.7 million (OECF loan)
Status/Schedule: Initiated 1996, Completed 1997

The first part of this loan funded the purchase of machinery and equipment for the construction of a gas supply facility and a fill-cover-up garbage yard. A second part of the loan enabled the Export-Import Bank of China to extend long-term loans to non-public entities for the purpose of investing capital in projects that improve the environment.

Liuzhou Environment Improvement Project III

Partner: Liuzhou Municipal People's Government
Focus: Air Pollution
Funding: U.S. $ 21.9 million (first loan) and U.S. $35 million (second loan)
Status/Schedule: First loan committed in December 1996, Second loan committed in September 1997

This project is to construct a flue gas desulfurization system at the Liuzhou Power Plant in order to improve the environment in Liuzhou, Guangxi Province. This loan represents OECF's third commitment in this region.

Qingdao Development Project

Partner: Qingdao Municipal Government
Focus: Water Supply, Sewerage
Funding: U.S. $23.4 million (OECF loan)
Status/Schedule: Initiated 1993

This dual-purpose project has constructed water supply facilities to meet the quickly increasing demand for water in the Qingdao Economic and Technical Development Zone. This OECF loan has also funded the construction of sewer facilities to improve sanitation for humans and to reduce sea pollution.

Shandong Yantai Water Supply and Water Induced Disaster Management Project

Partner: Yantai Municipal People's Government
Focus: Water Supply
Funding: U.S. $57.2 million

The project is comprised of construction of water supply facilities, reservoirs, and tidal embankments in Yantai City, Shandong Province. These new water facilities will improve the water supply system in the city as well as help Yantai

City overcome water shortages and meet the increasing demand for water.

Shanxi Wangqu Thermal Power Plant Construction Project

Partner: Ministry of Electric Power
Focus: Energy, Air pollution
Funding: U.S. $543.2 million

The project is leading to the construction of the Shanxi Hejin Thermal Power Plant with the capacity of 600MW x 2 in Lucheng City of Shanxi Province. This power plant will help to meet the increasing demand for electricity and to assure stable electricity supply in Shanxi Province.

Shaanxi Hancheng No. 2 Thermal Power Plant Construction Project II

Partner: State Power Corporation of China
Funding: U.S. $32.6 million (OECF loan)
Status/Schedule: Loan committed in September 1997

This goal of this project is to construct a thermal power plant with a capacity of 600MW x 2 in Hancheng City in Shaanxi Province in order to meet the increasing demand for electric power in Shaanxi Province and the Northwest Power Grid. This loan is OECF's second commitment in this region.

Shenyang Environmental Improvement Project

Partner: Chinese National Environmental Protection Agency (now SEPA)
Focus: Air Pollution, Water Pollution
Funding: U.S. $46.6 million (Loan)
Status/Schedule: Initiated 1996

This project's primary goal is to improve air and water quality in the city of Shenyang, Liaoning Province. The project should reduce pollution from the copper smelting and acid making system of the Shenyang Smelter, which is the largest single source of pollution emissions in Shenyang. The project also attempted to reduce the number of small and inefficient boilers used in the city by expanding the quantity of heat and electricity supplied by centralized power stations in the city. The OECF loan was used to purchase machinery and equipment for the project.

Urban Gas Project

Partner: Ministry of Construction
Focus: Gas
Funding: U.S. $139.6 million (Loan)
Status/Schedule: Initiated 1988, Completed 1989

The project aimed to satisfy the increasing demand for coal gas in Harbin, Fuzhou, and Guiyang Provinces.

Xian Water Supply Project

Partner: Chinese Ministry of Construction
Focus: Water Supply, Land Subsidence
Funding: U.S. $66.5 million (Loan)
Status/Schedule: Initiated 1993, Completed 1995

The project expanded and improved the water supply system that serves the urban part of Xian City. The goal is to meet the area's increasing demand for water and consequently to combat the land subsidence and other negative environmental impacts that are being caused by the over-pumping of underground water.

Xiang River Basin Hunan Environmental Improvement Project II

Partner: Hunan Provincial People's Government
Focus: Sewerage, Gas, Municipal Waste
Funding: U.S. $54 million (Loan)
Status/Schedule: Initiated 1997

This project constructed sewage treatment plants and sewage pipeline networks in major cities along the Xiang River. The goal was to reduce the overall pollution load in the portion of the river that is located in Hunan Province. A portion of the OECF loan supported the purchase of machinery and equipment for these purposes. To attack local air pollution and lower acid rain-causing emissions, a second portion of the loan funded the expansion of urban gas supplies in the area. The third portion of the loan supported the construction of garbage disposal facilities, which should reduce the impact of municipal waste on water quality in the region. This loan represents OECF's second commitment to this area.

The Netherlands

Dutch Government

Cleaner Production in Township and Village Enterprises

Partners: University of Amsterdam, China National Cleaner Production Center, provincial Environmental Protection Bureaus
Focus: Cleaner Production
Funding: U.S. $1 million
Status/Schedule: Initiated 1999, Targeted Completion 2002

This Dutch initiative focuses on promoting cleaner production by township village enterprises in Yunnan and Anhua Provinces (Source: *Chinabrief*, May 1999).

CO_2 Mitigation Policy

Partner: China International Council on Environment and Development
Focus: Climate Change
Status/Schedule: Initiated 1999, Targeted Completion 2001

This project supports the Council's advisory role in developing policies for the gradual reduction of CO_2 emissions in China (Source: *Chinabrief*, May 1999).

Efficient Technology in Huai River Tanneries, Anhui Province

Partners: Netherlands Applied Technology Research Institute, Chinese Ministry of Agriculture and Department of Township Enterprises in Anhui Province
Focus: Water Pollution
Funding: U.S. $2.4 million
Status/Schedule: Initiated 1999, Targeted Completion 2002

This project introduces Dutch integrated clean chrome leather technology for effluent treatment in tanneries located in Anhui Province. The project attempts to induce Chinese tanneries to up their environment-related investment (Source: *Chinabrief*, May 1999).

Environment and Economic Self Sufficiency Program

Focus: Pollution
Status/Schedule: Initiated 1997

This program encourages the introduction of pollution abatement and treatment technologies, by offering financing that provides an effective subsidy of sixty-five percent. Feed mills, cattle and chicken slaughter houses, drinking water supply projects, and power stations all had taken advantage of this financing as of 1997 (Source: *China Development Briefing*, April 1997).

Forestry Management

Partner: Yunnan Forestry Department
Focus: Forestry
Funding: U.S. $14 million (Grant)
Status/Schedule: Initiated 1997

This project provides technical support funds to the Yunnan Forestry Department, with the goal of helping them to improve resource management and implement community forestry practices (Source: *China Development Briefing*, April 1997).

Improved Process Instrumentation for Environment and Energy Management in Anhui

Partners: University of Amsterdam, Chinese Center for Environmentally Sound Technology Transfer
Focus: Industrial Process Instrumentation
Funding: U.S. $1.5 million (Grant)
Status/Schedule: Initiated 1999, Targeted Completion 2003

This project aims to help Chinese manufactures produce process instrumentation equipment of higher quality and better design by introducing Norwegian technology and know-how. In addition, selected industrial sectors in Anhui Province will be encouraged to utilize process instrumentation, so that they can produce products in a more efficient manner that uses less water, energy, and other materials (Source: *Chinabrief*, May 1999).

Industrial Policy Evaluation

Partners: UN Industrial Development Organization, Netherlands Economic Institute (University of Rotterdam), Chinese State Development and Planning Commission
Focus: Policy
Funding: U.S. $1.7 million (Grant)
Status/Schedule: Initiated 1999, Targeted Completion 2002

The project attempts to improve the ninth five-year plan by helping the State Development and Planning Commission to conduct environmentally sustainable policy modeling (Source: *Chinabrief*, May 1999).

Integrated Pest Management

Partners: National Agro-technical Extension Service Center (China), Provincial Agricultural Departments, County level Plant Protection Stations, Township Agro-technical Extension Stations
Focus: Pest Management
Funding: U.S. $2 million (Grant)
Status/Schedule: Initiated 1993, Targeted Completion 2003

The main goal of this nationwide project is to promote the use of environmentally sound integrated pest management techniques for controlling pests in rice fields. The grant supports the construction of a network of 500 field schools, where farmers can go to receive hands-on training in integrated pest management (Source: *Chinabrief*, May 1999).

Nature Reserve Protection

Partners: Department of Wildlife Conservation, Chinese Forestry Department, Forestry Design Institute, and other local institutions in China
Focus: Forestry
Funding: U.S. $14 million
Status/Schedule: Initiated 1998, Targeted Completion 2003

The multifaceted project involves four Yunnan Province prefectures: Simao, Baoshan, Nujiang, and Dehong which together contain seven nature preserves. The project aims to build capacity at the Chinese Forestry Department and to help it better conserve primary forest. Secondly, the project seeks to enhance livelihoods in the communities in and around the prefecture's nature reserves. Thirdly, the project supports the following conservation activities: developing a biodiversity resources inventory, establishing biodiversity monitoring systems, controlling caterpillars, improving fire prevention, and better mapping the reserves (Source: *Chinabrief*, August-November 1999).

Qomalangma Reserve Management

Focus: Biodiversity, Community Development
Funding: U.S. $2.5 million (Grant)
Status/Schedule: Initiated 2000, Targeted Completion 2004

This project aims to protect the wildlife and bio-diversity of Tibet's Qomalangma (Mount Everest) Nature Reserve. Main activities include supporting community-based development and strengthening the park's environmental management (Source: *Chinabrief*, May 1999).

Strengthening the Production of Environmental Technology

Focus: Wastewater, Solid Waste
Funding U.S. $2.5 million (technical assistance grant) and U.S. $12.5 million (technology transfer loan)
Status/Schedule: Initiated 1999, Targeted Completion 2004

This project, which still is in the planning stages, aims to help Chinese environmental technology manufacturers produce products of higher quality and efficiency. The project will focus on wastewater technology and also on solid waste treatment (Source: *Chinabrief,* May 1999).

New Zealand

New Zealand Government

Community Forestry in Fujian Province

Partner: Groome Poyry Ltd.
Focus: Community Forestry
Funding: U.S. $1.1 million (Grant)
Status/Schedule: Initiated 1991, Completed 1997

The project aimed to help local citizens in Shouning County improve tree crops and increase their supply of timber and firewood. The project consisted of two parts. The first provided technical assistance, which focused on nursery and plantation management and post-harvest techniques. The second part provided a revolving micro-credit fund (Source: *China Development Briefing,* April 1997).

Geothermal Power in Tibet

Partner: Industrial Research Ltd.
Focus: Geothermal Power

Funding: U.S. $175,000 (grant total as of April 1997)
Status/Schedule: Initiated 1995

The project provides training and technical support for the construction and installation of an on-stream geothermal plant in Tibet (Source: *China Development Briefing,* April 1997).

Norway

Note: All Grant and loan values are converted from Norway Kroner to U.S. dollars using the exchange rate of 7.81984 NOK = U.S. $1, the market rate on October 31, 1999 at 6:11 PM EST.

Norwegian Government

Air Quality Management and Planning System for Guangzhou

Partners: Guangzhou Science and Technology Commission, Norwegian Institute for Air Research
Focus: Air Pollution, Policy
Funding: U.S. $1.9 million (Grant)
Status/Schedule: Initiated 1996, Completed 1999

The project aimed to develop and implement an air quality management and air quality planning system for Guangzhou City and to develop an air quality action plan for the city. The action plan will become part of a larger master plan to reduce air pollution throughout Guangzhou.

Bei Dou Fisheries Research and Management Project

Partners: CAR Bureau of Cultural Relics, Central Office for Cultural Heritage (Norway)
Focus: Fisheries
Funding: U.S. $870,000 (Grant)
Status/Schedule: Initiated 1998, Completed 1999

The goal of the project was to implement competence enhancing and institution building activities in the fields of fisheries management and fisheries research.

Biodiversity Projects

Partner: State Environmental Protection Agency (China)
Focus: Energy, Biodiversity, and Environmental Management
Status/Schedule: Initiated 1999

A series of new energy, biodiversity, and environmental management projects financed by the Norwegian government is planned (Source: *Chinabrief*, May 1999).

Capacity Building for Environmental Monitoring Network for River Basins and Regions

Focus: Water Quality Monitoring and Assessment
Funding: U.S. $63,900 (Grant)
Status/Schedule: Initiated March 1998

The grant supports a feasibility study for a larger project. The main project, if implemented, would provide a monitoring and quality assessment system that is comprehensive and consistent enough to provide a basis for re-

gional water pollution control in the Three Lake District.

China Council for Environment and Development

Partner: China Environment Project Society
Focus: Research
Funding: U.S. $1.1 million (Grant)
Status/Schedule: Initiated March 1998, Targeted Completion 2003

The grant supports scientific work on selected environmental issues.

Chinese Television Team

Partners: Norwegian Ministry of Environment, China Central TV
Focus: Television Programming, Policy, Technology
Funding: U.S. $28,500 (Grant)
Status/Schedule: Initiated March 1998

This grant pays a Chinese television team to produce a television program about environmental policy and environmental technology in Norway.

Cleaner Production, Phase 2

Partners: Beijing Science and Technology Commission, World Cleaner Reduction Society
Focus: Cleaner Production
Funding: U.S. $235,000 (Grant)
Status/Schedule: Initiated 1998, Completed 1999

The project planned to introduce cleaner production methods in Chinese factories.

Environmental Project in Zhuzhou and Jiaxing Cities

Partners: Municipal governments of Zhuzhou (Zhejiang) and Jiaxing (Hunan) cities, Interconsult
Focus: Sewerage, Water Supply, Cleaner Production
Funding: U.S. $1.3 million (Phase one grant); U.S. $400,000 (Phase two grant)
Status/Schedule: Initiated 1996, Phase one completed 1998; Phase two initiated 1999

The project built a purification system to provide clean and healthy drinking water for both cities. This project also led to the construction of sewage treatment systems and implemented cleaner production methods to reduce industrial contributions to air, water, and soil pollution. A March 1999 agreement extended wastewater projects in Jiaxing, Zhejiang Province and Zhuzhou, Hunan Province (Source: *Chinabrief*, May 1999).

Environmental Statistics and Analysis

Partners: State Statistical Bureau of China, State Statistical Bureau of Norway
Focus: Environmental Statistics
Funding: U.S. $1 million (Grant)
Status/Schedule: Initiated 1998, Targeted Completion 2001

The project has four goals: 1) to build natural resources accounting capacity; 2) to improve the ability to compile environmental statistics; 3) to implement tools to link natural resources use to both economic activity and environmental impacts; and 4) to provide better methods of statistical presentation and encourage their use.

Environmental Surveillance and Information System for Yantai

Partners: Yantai Science and Technology Commission, Norwegian Institute for Air Research
Focus: Monitoring, Air Pollution, Water Pollution

Funding: U.S. $1.4 million (Grant)
Status/Schedule: Initiated 1996, Completed 1999

The first goal of the project was to evaluate and improve Yantai's monitoring system for air and water quality. The second goal was to develop and implement a new environmental surveillance system for Yantai.

Establishment of an Indicator-based Electronic State of the Environment Report

Partners: UNEP/GRID Arendal, National Environmental Protection Agency (now SEPA)
Focus: Statistics, Policy
Funding: U.S. $89,500 (Grant)
Status/Schedule: Initiated April 1997

This project aims to produce a user-friendly *State of the Environment Report* for China. The content of this report, based upon quantitative indicators, will be published in both Mandarin Chinese and English.

Evaluation of Strategies to Control the Environmental Effects of Energy Technologies

Partners: Norwegian School of Management, Beijing Institute of Technology, Tsinghua University, Beijing Municipal Research Academy
Focus: Energy
Funding: U.S. $485,000 (Grant)
Status/Schedule: Initiated 1998, Targeted Completion 2001

The project will finance two doctoral programs, with the goal of increasing indigenous Chinese knowledge and expertise with regard to the environmental impacts of energy technologies.

Handbook and Training Program for Economic and Financial Analysis of Projects Under the Trans-Century Green Project Program

Partners: ECON, National Environmental Protection Agency (now SEPA)
Focus: Policy, Project Analysis
Funding: U.S. $83,100 (Grant)
Status/Schedule: Completed 1998

The Chinese Trans-Century Green Project Program lists hundreds of projects for which the SEPA would like to attract foreign aid. This grant supported the development of a handbook for the evaluation of these projects.

Integrated Management of Industrial and Municipal Wastewater in Jiaxing, Zhejiang Province

Focus: Wastewater
Funding: U.S. $625,000 (Grant)
Status/Schedule: Initiated 1996, Completed 1998

The project had three goals: 1) to build an action plan for the integrated management of municipal and industrial wastewater in a Chinese city; 2) to demonstrate inexpensive and efficient wastewater treatment processes; and 3) to write a master plan for comprehensive wastewater management in Jiaxing City.

Master Plan Against Air Pollution in Shanxi Province

Partners: Nordic Consulting Group, Shanxi Environmental Protection Bureau
Focus: Air Pollution
Funding: U.S. $62,800 (Grant)
Status/Schedule: Completed February 1998

This feasibility study was for a project to develop a comprehensive master plan to combat air pollution in Shanxi Province. The feasibility study included a proposal for founding a new Shanxi Center for Energy and Environment.

Rehabilitation Plan for Suzhou Creek, Shanghai

Partners: Shanghai Academy of Environmental Sciences
Focus: Water Pollution
Funding: U.S. $20,000 (Grant)
Status/Schedule: Initiated 1998, Completed 1999

The project aims to develop a plan for the rehabilitation of Suzhou Creek.

Soga Ecomuseum

Partner: Chinese Society of Museums
Focus: Environmental Education
Funding: U.S. $89,500 (Grant)
Status/Schedule: Initiated 1997, Completed 1998

The grant supported the establishment of an Ecomuseum in Soga.

Surveillance of Water Quality in the Songhua River, Heilongjiang Province

Partners: Heilongjiang Environmental Protection Bureau, Norwegian Institute for Water Research
Focus: Monitoring
Funding: U.S. $1.5 million (Grant)
Status/Schedule: Initiated 1996, Completed 1999

The project sought to design and to implement an environmental surveillance system for the Songhua River. The project also aimed to build a system for environmental monitoring and planning in Heilongjiang Province.

Translation of Green Global Yearbook

Partners: Fridtjof Nansen Institute, National Environmental Protection Agency (now SEPA)
Focus: Translation
Funding: U.S. $190,000 (Grant)
Status/Schedule: Initiated 1996, Completed 1998

This project funded the translation of the Green Globe Yearbook's 1996, 1997, and 1998 editions into Mandarin Chinese.

Water and Air Pollution Projects

Partner: Ministry of Science and Technology (China)
Focus: Water Pollution, Air Pollution
Status/Schedule: Initiated March 1999

During a visit to China by the Norwegian Minister for the Environment in March of 1999, agreements for eight new projects in the fields of air and water pollution abatement were signed with the Ministry of Science and Technology (Source: *Chinabrief*, May 1999).