

## **WIND ENERGY DEVELOPMENT IN CHINA**

**Developing Cooperative Activities  
between  
the Department of Energy of the United States of America  
and  
the Ministry of Electric Power of the People's Republic of China**

### **ANNEX II**

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

between  
The Department of Energy of the United States of America  
and  
The State Science and Technology Commission of the People's Republic of China

The Department of Energy of the United States of America (USDOE) and the Ministry of Electric Power (MOEP) of the People's Republic of China, hereinafter referred to as the Parties:

**Noting** the Agreement between the Government of the United States of America and the Government of the People's Republic of China on Cooperation in Science and Technology signed at Washington on January 31, 1979, as amended and extended, hereinafter referred to as the "Umbrella Agreement;"

**Noting** that under the Umbrella Agreement the USDOE and the State Science and Technology Commission (SSTC) signed a Protocol for Cooperation in the Fields of Energy Efficiency and Renewable Energy Technology Development and Utilization on February 23, 1995, hereinafter referred to as the "Protocol;"

**Noting** that Article 2 of the Protocol identifies a number of areas for potential cooperation in the field of energy efficiency technology and that Article 6 of the Protocol provides that the USDOE and the SSTC may invite other organizations to participate in Annexes under the Protocol; and

**Desiring** to establish the capability within the Chinese utility system to analyze and implement the technical performance and economics of large-scale wind farm development and wind/hybrid village power systems;

Have agreed as follows:

## **ARTICLE I - OBJECTIVES**

The objectives of this Annex are to promote the sustainable large-scale deployment of wind energy systems in both grid-connected and off-grid village power applications in the People's Republic of China, with support from USDOE, national laboratories and the wind industry in the United States, in order to demonstrate the technical and economic feasibility of advanced wind energy technology, and to enhance its commercialization potential for the benefit of both countries.

## **ARTICLE II - AREA OF COOPERATION**

Cooperation may include, but is not limited to, the following:

- A. Utility wind power plant analysis for China, including on-site measurements;
- B. Wind/hybrid mini-grid analysis for China, including on-site measurements; and
- C. Analysis of other wind energy technology applications in China.

## **ARTICLE III - PARTICIPATING ORGANIZATIONS**

- A. The principal organization responsible for conducting the cooperative activities under this Annex in the United States shall be the USDOE.
- B. The principal organizations responsible for conducting the cooperative activities under this Annex in the People's Republic of China shall be the State Science and Technology Commission (SSTC) and the Ministry of Electric Power (MOEP).
- C. Both sides may invite other government agencies, provincial or regional electric utilities in the People's Republic of China, industrial and trade organizations, academic institutions, and national laboratories, such as the National Renewable Energy Laboratory of the USDOE (NREL) and the Hydropower Planning General Institute of the MOEP, to participate in one or more activities under this Annex.

## **ARTICLE IV - COOPERATIVE ACTIVITIES AND RESPONSIBILITIES OF THE PARTIES**

- A. Analysis of wind power applications

The Parties agree to cooperate in the planning and analysis of the technical and economic aspects of both multi-megawatt grid connected wind power plants and wind/hybrid village power systems planned for installation by provincial and regional electric utilities in the People's Republic of China. The responsibilities of the Parties are as follows:

1. The Parties and other participants will conduct wind resource assessment and verification in up to three provinces where wind power plants are planned. The Parties shall cooperate to collect wind resource and geographic terrain data to produce regional wind resource maps. Field measurements will be conducted for periods of a year or more, to verify the accuracy of the wind resource estimates.
2. The Parties will collect electric utility system characteristics data needed for analysis of wind power plant for up to three specific sites. The Chinese participants will define the technical characteristics of existing and projected electric utility equipment and loads at these planned sites. The USDOE, through NREL, will make available computer models and tools to conduct analysis studies.
3. The USDOE, through NREL, will provide training on the latest methods for conducting wind projects technical and economic analysis. Up to two specialists from China will visit USDOE, NREL and U.S. industrial sites for up to six months to be trained and to use the computer models and to conduct detailed project analysis.
4. USDOE will retain title to any instrumentation, equipment or spare parts that it contributes to activities conducted under this Annex. Upon the termination or expiration of, or during the course of cooperation under, this Annex or the Protocol, the Parties may agree, consistent with the laws and regulations of the Parties, that such instrumentation, equipment or spare parts may be donated to the Government of China or exchanged for data or information owned by the Government of China.
5. It is understood the People's Republic of China will conduct annex activities on projects that are likely to involve the use of turbines substantially manufactured in the United States. In the future first priority will be given to U.S. manufactured turbines, all other factors being equal in fair competition among suppliers.

#### B. Information Exchanges and Visits

The Parties shall exchange technical information and experiences and arrange collaborative visits supporting implementation of projects being developed in China by firms established in the United States. These exchanges and visits between the Parties may address technical, economic, business development, project planning, wind turbine development and testing, and commercialization in the area of wind energy.

### ARTICLE V - MANAGEMENT

Each Party shall designate one Project Coordinator who shall jointly plan the technical approach for accomplishing the objectives of this Annex, and who shall be responsible for the program, schedule, coordination and reports. A Project Coordination Meeting shall be held at a mutually agreed site, preferably annually.

## ARTICLE VI - COSTS AND LEGAL PROVISIONS

Except when otherwise specifically agreed, all costs including travel and lodging expenses, resulting from cooperation under this Annex shall be borne by the Party that incurs them. The implementation of this Annex is subject to the availability of appropriated funds and personnel, and subject to applicable laws and regulations of the countries of the Parties.

## ARTICLE VII - INTELLECTUAL PROPERTY RIGHTS

Article 8 of the Protocol and Annex I of the Umbrella Agreement govern the dissemination, use and protection of information used or generated in the course of activities conducted under this Annex, and the allocation of intellectual property rights arising from this activity.

The Parties shall protect computer models, wind resource data and maps generated from cooperative activities of this Annex as business-confidential information in accordance with the Umbrella Agreement, the Protocol and applicable laws.

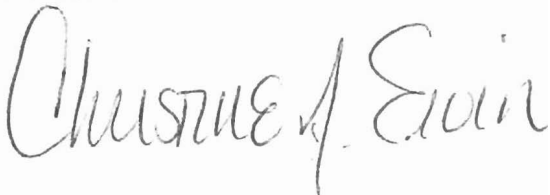
## ARTICLE VIII - ENTRY INTO FORCE AND TERMINATION

A. This Annex shall enter into force upon signature by the Parties and remain in force for five (5) years or until termination of the Protocol, whichever occurs first. This Annex may be amended or extended by mutual written agreement of the Parties.

B. At the discretion of either Party, this Annex may be terminated upon six (6) months advance notice in writing to the other Party.

SIGNED at Washington, this 25<sup>th</sup> day of October, 1996, in duplicate, in the Chinese and English languages, each text being equally authentic.

FOR THE DEPARTMENT OF ENERGY  
OF THE UNITED STATES OF  
AMERICA:



FOR THE MINISTRY OF ELECTRIC  
POWER OF THE PEOPLE'S REPUBLIC  
OF CHINA:

