

ESTABLISHING A RENEWABLE ENERGY INDUSTRIES ASSOCIATION IN CHINA

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ABSTRACT: Renewable energy development in China is expanding beyond the capabilities of existing institutions to provide support for sustainable commercial development. China is currently in a transition phase in which the central and local governments are in the process of developing new policy incentives and environmental regulations impacting renewable energy technology dissemination. There is still a large gap between renewable energy resource potential and existing levels of technology dissemination in China; nevertheless, project development is increasing in scale and a broader investment base is becoming available for project financing. In this transition, renewable energy industry groups in China need services in the form of policy advocacy, business development assistance and training, facilitation of financing, and assistance in interfacing with the international renewable energy community. In 1999 the United Nations Development Programme (UNDP) and the Chinese State Economic and Trade Commission (SETC) initiated support for the establishment of the Chinese Renewable Energy Industries Association (CREIA). CREIA is a non profit and non-government organization that uses market-oriented approaches to interface with the domestic industry to promote renewable energy commercialization. CREIA will manage an Investment Opportunity Facility (IOF) to help connect projects with investors, and will play an advocacy role on behalf of industry with the government and other stakeholder groups. It will also provide services to members in form of market information, databases, trade missions, foreign exchanges, workshops, and training. This paper will summarize the establishment, activities to date, and future plans of the CREIA organization.

Keywords: Developing Countries - 1: Financing - 2: Sustainable - 3

1. INTRODUCTION

China is in a transition period in which the pace of renewable energy development is increasing. Although there is still a large gap between the potential of renewable energy based on available resources and current levels of market development, developers are in the process of increasing the scale and scope of current and near term projects. For example, in the case of photovoltaics (PV) the total installed capacity of PV systems in China at the end of 1999 was approximately 13 MW [1], distributed among telecommunications, industrial, agricultural, consumer, and rural electrification applications. However, in the fastest growing PV market sector of rural electrification, several large-scale projects are under development that will rapidly expand PV dissemination in China.

One example is a 10 MW solar home system program being developed by the World Bank for western China [2]. The Shell Company is implementing a large-scale solar home system project in the Province of Xinjiang [3]. In addition, several large-scale solar home system and village power projects are in the approval stage in the Brightness Program under the Chinese State Development Planning Commission [4]. Similar examples of increased scale of development can be found in the market sectors of large-scale wind farm development, solar water heating applications, biogas plants, and bagasse cogeneration.

With the increasing scale of renewable energy development comes new needs for support mechanisms to promote sustainable commercialization and market expansion. Policy initiatives for renewables formulated by central government agencies in China are a major activity in the Government's planning processes for the 10th Five-Year Plan (2001-2005). For example, the Chinese State Development Planning Commission, with foreign expert assistance, is assessing the potential for Renewable Energy Portfolio Standards (RPS), and other policy mechanisms, for promoting renewables. Provincial governments are also developing policy initiatives. For example, solar and wind renewable energy systems are integrated into the rural electrification expansion plans of most western provinces as one important option for village electrification.

The next stage of renewable energy expansion in China also has implications for business development and financing. Most of the domestic renewable energy business base in China has limited experience with international standards in project development and with commercial financing of large-scale projects. Technology transfer is also needed from the international and domestic marketplaces to promote the dissemination of state-of-the-art commercial technologies, achieve cost reductions, and improve the manufacturing base in China. Information exchange is needed to promote international best practices for project development and financing, facilitate business interactions between domestic and international

organizations, and provide an interface between domestic industry groups and key government decision-makers and other stakeholders.

2. RENEWABLE ENERGY STATUS IN CHINA

2.1 Potential of Renewable Energy

An indication of the potential for selected renewable technologies is given in Table I. Figures are expressed in terms of the cumulative installed capacity or production levels in 1998 vs. the levels projected for 2010 based on estimates from the Chinese State Economic and Trade Commission [1]. The potential for accelerated commercial development is especially significant for grid-connected wind and solar water heating technologies. Projections for solar PV installed capacity can be considered a lower limit.

Table I: Indication of potential of several key renewable energy technologies in China.

Technology	1998*	2010*
Solar PV (MW)	13	56
Solar Water Heaters (10 ⁶ m ²)	15	171
Grid-Connected Wind (MW)	224	3000
Small Wind (MW)	17	430
Geothermal Power (MW)	25	100
Biogas Livestock Farms (10 ⁸ m ³)	0.6	2.8
Biogas Industrial Wastewater (10 ⁸ m ³)	3.2	24

*Cumulative

2.2 Industry Status

Table II provides estimates of numbers of companies operating in selected market sectors. Most market sectors are subject to heavy competition among a large number of small companies. Product quality is often poor and profit margins are low. In many market sectors a consolidation is occurring with larger successful companies beginning to increase market share and smaller companies merging or going out of business.

Table II: Characterization of industry groups in terms of number of manufacturing and distribution companies.

Market Sector	Large Companies*	Small Companies
PV	5	>45
Wind		19
Solar Water Heater	10	1000
Biomass	20	600
Geothermal		30

*Companies of sufficient size to take advantage of some economy of scale in manufacturing or distribution.

Source: Chinese State Economic and Trade Commission

2.3 Barriers to Commercialization

Factors contributing to commercialization barriers for renewable energy development in China include government policy and planning. At the national government level there is a lack of a systematic and comprehensive policy structure tailored for renewable energy development. Coordination among agencies responsible for renewable energy planning is weak, which

is reflected in the lack of a long-term strategic plan for sustainable renewable energy commercialization.

Other factors include the high cost of the domestic renewable energy technology base in some market sectors. There is a general lack of public and stakeholder awareness of the benefits and availability of renewable options. Assessment of renewable energy resources is incomplete and accessibility to resource databases is limited. There is also a need for the development and application of standards and certification testing to insure product quality and safety. Linkages from research and development to commercialization are poor due to lack of development capital and cutbacks in government support of R&D in China.

As the project development scale increases, financing barriers exist in the form of lack of access to information and lack of professional financial institutions familiar with the characteristics of renewable energy project financing. There is also a lack of intermediate organizations that can provide services to renewable enterprises in China for market development assistance.

3. FORMATION OF CREIA

3.1 Supporting Organizations

In March 1999 the United Nations Development Programme (UNDP) initiated the project CPR/97/G31 entitled "Capacity Building for the Rapid Commercialization of Renewable Energy in China." The major objective of this project is to support the acceleration of sustainable commercialization of renewables by addressing policy, business, finance, and technical issues through capacity building activities. Corollary objectives include achieving a detectable increase in technology deployment through project activities, developing a strong interface with industry and investment communities, and promoting the transfer of international experience and technology to China.

The GEF/UNDP Project is funded at a level of \$25.8 million (USD) over a period of five years. Core funding comes from the Global Environmental Facility (GEF) and the Chinese Government. Co-financing contributions come from the AUS AID Program of Australia and the Government of the Netherlands. The project is implemented by the Chinese State Economic and Trade Commission in Beijing and is executed by the United Nations Department of Economic and Social Affairs in New York.

One of the major activities in the GEF/UNDP project is supporting the establishment of the Chinese Renewable Energy Industries Association. Both the UNDP and the SETC will provide initial support of CREIA staff and facilities for a three-year period. After five years the organization should become fully self-supporting through membership fees and services. CREIA is viewed as a key long-term legacy of the GEF/UNDP project.

3.2 Establishment of CREIA

During the latter half of 1999, a series of consultative activities were conducted with a number of companies, industry groups, government organizations and investors in China. Consultations provided feedback from industry regarding their expectations and needs. Industry also provided recommendations for structuring the CREIA

organization. A formal institutional workshop for the organization was conducted in January 2000, attended by over 30 key companies and trade associations in China, as founding members of CREIA. These companies are major representatives from the wind, PV, solar water heater, biomass, and geothermal business sectors.

During January 2000 CREIA was formally registered as CREIA Renewable Energy Ltd. under Chinese corporate law. Corporation status is temporary pending approval of CREIA's application with the Chinese government for trade association status, expected within several months. A Board of Directors and Secretariat has been appointed, as well as the first Director of CREIA, Mr. Zhu Junsheng.

CREIA is a non-profit corporation and although it receives initial support from the State Economic and Trade Commission in China, it is not formally associated with a government organization. The non-government status distinguishes CREIA from most existing trade associations in China, which are frequently departments of a government agency. As such, trade associations in China in the past have been more responsible to the government than to their industry membership base.

CREIA will conduct a membership drive in 2000 to attract a wide base of support from renewable energy companies. High priority market sectors for membership in the organization include solar photovoltaics, solar hot water heaters, biomass, grid-connected wind farms, small wind technologies, geothermal power, and hybrid systems (general rural electrification markets).

Other trade associations can also attain member status. Provision has been made for foreign companies to join CREIA as international affiliate members, allowing them to register in CREIA's company database and giving them access to information services. In the initial phase of CREIA development, Chinese companies will be given full membership status.

3.3 Objectives

CREIA has been established with the specific objective to work with Chinese renewable energy industry groups to promote sustainable renewable energy development based on market-oriented commercialization principles. In implementing this objective, CREIA will provide several functions.

CREIA will serve as a bridge between regulatory authorities, research institutes and industry professionals, providing a forum to discuss renewable energy development at the national level. Subsequently, CREIA will play an advocacy role on behalf of industry to advise the Government of China on strategic policy formulation.

CREIA will be a window bringing together national and international project developers and investors. It will promote technology transfer and raise awareness of renewable energy investment opportunities. An Investment Opportunity Facility (IOF) will be developed and regional networking meetings and training activities will be conduits for information exchange.

CREIA will provide a communication network for its members from the Chinese renewable energy business community. This network will allow members to communicate across their respective subsectors and provide a platform to voice their concerns collectively.

CREIA will play an advocacy role on behalf of industry to raise the general profile of renewable energy

technologies, applications, and industry as a whole. This includes information dissemination to the public and public education.

3.4 Industry Response

During 1999 and 2000 the level of interest shown in CREIA by Chinese companies has been high. International companies and trade associations have also exhibited a high interest in CREIA. There is a general recognition of the need for a trade association that will promote the needs of renewable energy companies to advance commercialization objectives.

Recommendations by companies have been given freely to CREIA in the formative stage. At the same time, expectations are high, and companies anticipate a high level of performance and effectiveness from CREIA.

4. CREIA STATUS

In 1999 a contract to support CREIA was awarded by the UNDP to a team consisting of IT Power in the U.K. and Alternative Energy Development, Inc. (AED) in the United States. The support team is working with members of the CREIA staff to prepare a five-year business plan and marketing strategy for the organization that will allow CREIA to become fully self-supporting in five years.

A series of business and management training activities for CREIA was developed that will be executed during May and June 2000. The primary objectives of the training program are to create renewable energy project identification skills, project assessment and preparation capabilities, and awareness of domestic commercial and international sources of financing for renewable projects within CREIA. Training will target CREIA Board members, operational staff, renewable energy project developers, financiers, and government decision-makers.

In April and May 2000 consultations with businesses, investors, and trade associations were conducted by CREIA staff and corporate members in the United States and Europe. These consultations included information exchanges between CREIA and experienced trade groups that was used to further develop a proposed inventory of information and services that CREIA will provide to its membership. Business contacts were also made between foreign and Chinese companies and with foreign investors and financial institutions.

5. INVESTMENT OPPORTUNITY FACILITY

5.1 Objectives

One of the key services that CREIA will provide to its membership base is the development and maintenance of an Investment Opportunity Facility (IOF). The principal objective of the IOF is to provide assistance to the domestic renewable energy industry to identify, develop and obtain financing for renewable energy projects.

Specifically, the IOF will work in close partnership with CREIA members to provide guidance, supporting information, and technical assistance to help members obtain investment partners and financing for the development of renewable energy projects. In addition,

the IOF will help members recognize and capitalize on the growing opportunities for renewable energy investments to mitigate global climate change.

5.2 Key Elements of the IOF

The IOF will consist of three key elements. First, the *Investment Development Process* will pro-actively identify and solicit renewable energy projects for investment.

Second, the *IOF Database and Tracking System* will hold key information on potential projects and prospects. Information will be accessible to industry, potential financiers, and other key stakeholders.

Third, the *Investment Review Committee* will review investment opportunities and identify potential sources of available funding. Information will be accessible on the CREIA INTERNET website, which is in development.

5.3 Outcomes

It is expected that the IOF will play an important role in facilitating the linkage between projects and financing in China. In combination with the IOF information databases, CREIA will conduct investment opportunity forums to create opportunities for project developers, entrepreneurs, and companies to meet directly with investors and financial institutions interested in renewable energy projects. Active outreach to the financial community has already started.

A corollary outcome of the IOF is expected to be improvements in the quality of feasibility studies and project proposals. Part of CREIA's training services will be devoted to assistance to project developers in preparation of documentation meeting international finance standards.

6. INFORMATION SERVICES AND DATABASES

6.1 Databases

Membership and public services from CREIA will include availability of a series of databases that will be published on the CREIA website. Databases linked with the IOF will include a membership information base with company profiles and contact details, profiles of financial institutions and financing intermediaries, and information for presenting and tracking projects and proposals.

In addition, CREIA will post database information generated in collaboration with the GEF/UNDP project in China. Such databases will include renewable energy resource information, financing channels and methods, renewable energy technology information, and an expert and project developer database. There will also be an international affiliates database.

6.2 Workshops, Training, and Conference Support

CREIA will collaborate with the GEF/UNDP project in conducting policy, business, finance, and technical workshops and training events for promoting renewable energy commercialization objectives. For example, CREIA will be involved in the project's standards and certification activities, finance training for project developers, and regional workshops for technology and application information dissemination.

During November 28-December 1, 2000, CREIA will be a major sponsor and organizer of the 2000 China

International Environment, Renewable Energy, and Energy Efficiency Exhibition and Conference, conducted in Beijing. During this period, CREIA will conduct two workshops directed at project financing for large-scale wind farms and renewable energy opportunities in China's western development initiative. During 2000, CREIA will also conduct a solar thermal standards and certification workshop and PV workshop (in October 2000 in Kunming, China).

7. SUMMARY

The establishment of the Chinese Renewable Energy Industries Association represents an opportunity to engage the domestic renewable energy enterprise base in China in a direct way to promote sustainable development and commercialization. CREIA will play an advocacy role on behalf of industry with the Government and other stakeholders, yet be independent of the Government and focused on the business sector and market-oriented principles for commercial development. Implementation of the Investment Opportunity Facility and maintenance of a series of website-based databases will help facilitate linkages of renewable energy projects with sources of financing. CREIA will also play a key role in interfacing the domestic industry in China with the global renewable energy community.

You may contact CREIA via the email address: creia@163bj.com.

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