CHINA RENEWABLE ENERGY SCALE-UP PROGRAM

(CRESP)

Phase 1

Institutional Development & Capacity Building

Project Implementation Plan

Prepared by

Project Management Office (PMO)
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National Development and Reform Commission (NDRC)
The People's Republic of China

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1 Objectives and Program Description

The China Renewable Energy Scale-up Program (CRESP) has been developed by the Government of China (GOC) in cooperation with the World Bank (WB) and the Global Environment Facility (GEF) to provide assistance with the implementation of a renewable energy policy development and investment program. It aims to: i) study the current renewable energy resources status; ii) learn from the experiences of developed countries in the development of renewable energy; iii) study and formulate renewable energy development policy in China; iv) implement renewable energy scale-up development v) provide cost-effective and commercial renewable energy electricity to the electric power market; and vi) replace coal-fired generation and reduce the local and global negative environmental impacts.

The program implementation cycle will be divided into three different implementation phases, as described below. The phasing is intended to assist a gradual roll out of the policy and supporting measures, in step with the implementation capacity of administrative and regulatory bodies, at the state and provincial levels, and of the commercial renewable energy industry.

Phase	Scope	Objective
1	Mandated Market Policy（MMP）Piloted in 4 Province, with Supporting Measures Implemented Nationally	Aided by the MMP and other interventions, commercial renewable energy suppliers demonstrate willingness to engage in a large-scale renewable energy market
2	MMP Adopted Nationally and Implemented in Selected Provinces; Supporting Measures Implemented Nationally.	Commercial renewable electricity suppliers provide energy to the electricity market, based on an MMP in about 10 selected provinces.
3	MMP Implemented in All provinces; Supporting Measures Continue Nationally.	Commercial renewable electricity suppliers provide energy to the electricity market efficiently, cost-effectively and on a large scale throughout China.

For Phase 1, the GEF Council approved a GEF grant of $ 40.22 million to finance assistance to create an enabling environment for scaling-up renewable energy investments and to support the provincial demonstration projects.

In the Phase 1, the focus would be as follows:
1. Developing and setting up the necessary policy instruments including laws, regulations or both, required to introduce an MMP and other supporting measures on the national level;
2. Testing the proposed MMP framework in four pilot provinces;
3. Creating a enabling environment for renewable electricity investment by commercial enterprises, in particular those from the private sector;
4. At the national level, supporting improvements to the quality and performance of renewable energy equipment and strengthening the capability of service providers to help building and enlarging the renewable industry.

The first phase would involve fewer investments in renewable electricity facilities than the second and the third phase, but would require considerable investment in capacity building. Building this capacity early would contribute to cost reduction in future phases.

CRESP is a 10 to 12 year program, implemented in three phases. Phase 1 of CRESP has two components:
- Investment Component
- Institutional Development & Capacity Building Component

The Institutional Development & Capacity Building Component in turn has 4 sub-components:
National Level Institutional Development & Capacity Building

Provincial Level Institutional Development & Capacity Building
Capacity Building Investors & Scale-up Support
Program Management

The CRESP Institutional Development & Capacity Building Component would provide financial assistance to create an enabling environment for scaling-up renewable energy investments and to support the provincial demonstration projects. This will include support for the implementation of the Renewable Energy Law, capacity building and addressing barriers to scale-up renewable energy investments in the provinces. The GEF assistance provided under the sub-programs will be managed by the PMO.

2 Indicators

The objective of Phase 1 of CRESP is to develop and implement the legal and regulatory framework for a Mandated Market Policy (MMP), and support its effective implementation in four provinces.

In phase 1, the focus would be on: (a) setting up the necessary laws and/or regulations required to introduce an MMP on the national level; (b) testing the operation of the proposed framework and creating a conducive environment for renewable electricity investment by commercial enterprises, in particular those from the private sector, in four pilot provinces (Zhejiang, Jiangsu, Fujian and Inner Mongolia), which have volunteered to be a pilot province; and (c) initiating a range of supporting activities at the national level, including GEF grant support for technology cost reduction and quality improvement, as well as building up of commercial market infrastructure. A substantial share of these activities would be targeted at the pilot provinces to help create a conducive environment.

Key project performance indicators by which the success of Phase 1 will be measured include the following:

- Market framework in pilot provinces established through laws and regulations;
- Number of manufacturers/service providers meeting quality standards in wind and biomass;
- Increased renewable electricity over baseline (TWh/year) and increased renewable capacity over baseline (GW);
- Reduced carbon emissions;
- Enactment of the Renewable Energy Law (REL) and issuing of regulations to implement the law at national level by 2008;
- Issuing laws and decrees for implementation of REL in pilot provinces (Fujian, Inner Mongolia, Jiangsu and Zhejiang) by 2008;
- Issuing national standards for wind turbines, availability of testing facilities and certification by 2008;
- Companies participating in cost-shared technology and service development activities (with emphasis on biomass and wind) by 2008;
- Pipeline of renewable energy projects under development in the provinces by 2008 (MW capacity in pipeline);
- 100 MW wind farm at Changjiang'ao, Pingtan Island, Fujian selling 260 GWh/year into local grid;
- 100 MW wind farm at Huitengxile, Desheng County, Inner Mongolia, selling 270 GWh/year into local grid;
- 24 MW straw-fired biomass power plant at Mabei Village Rudong County, Jiangsu, selling 162 GWh/year into local grid; and
- 27 MW of small hydro capacity in Zhejiang built or rehabilitated, selling an incremental 56 GWh/year into local grid

3 Management Structure

The National Development and Reform Commission (NDRC) has the overall responsibility of implementing the Institutional Development & Capacity Building (IDCB) Component of Phase 1 of CRESP. The IDCB will be implemented by the Project Management Office (PMO) established by NDRC for this purpose. The PMO will have 16 full time staff and a pool of consultants to provide technical support in specific areas (including an International Chief Technical Advisor). A multi agency Steering Committee has been established to provide overall advise and guidance, and to facilitate good coordination between the different agencies involved in scaling-up renewable electricity implementation. The Ministry of Finance (MOF) is responsible for channeling the GEF resources required to implement the IDCB component. For this purpose, MOF will establish a special account from which payments can be made for eligible expenses upon request by the PMO. This special account will be controlled by MOF.

Four investors, one in each province will implement the investment component. MOF is responsible for on-lending the IBRD loan to these investors. NDRC is responsible for approving the identified projects. The PMO will, among many other things, provide Technical Assistance to assist the implementation of the investment projects.

A more detailed description of the responsibilities of the different parties is given below.

NDRC. The National Development and Reform Commission (NDRC) is responsible for the design of CRESP and the implementation of the Institutional Development & Capacity Building (IDCB) component. NDRC is responsible for preparing all project documentation and reports related to the IDCB component, such as the Project Implementation Plan (PIP), Annual Plans, Quarterly Reports, Annual Reports, etc. With respect to the investment component, NDRC will make sure that the implementing agencies provide all documentation and reports required. NDRC will also approve the investment projects and assist in smooth implementation of the investment projects. NDRC will appoint one Program Director and one Program Coordinator of CRESP. The detail tasks of these two officials described below.

Program Director

- Overall direction of CRESP;
- Responsible for program promotion and supervision;
- Consulting with the team leader of the World Bank side on the implementation of the program;
- Promoting CRESP and MMP, especially reporting to GOC responsible agencies to promote the program;
- Attend important meetings on CRESP or arrange attendance by Program Coordinator;
- Assist in obtaining required approvals for the investment projects
- Authorize CRESP PMO Executive Director to sign contracts;

Program Coordinator

- Liaison between CRESP PMO and NDRC;
- Maintaining close contact with the CRESP PMO regarding implementation of CRESP;
- Obtain NDRC approvals where required to facilitate smooth implementation of CRESP;
- Monitor progress of implementing CRESP and propose corrective measures when needed;
- Assist Program Director to carry out tasks and responsibilities;
- Attend CRESP related meeting on behalf of Program Director;
- Prepare communication with World Bank and other agencies on behalf of Program Director;

PMO A project management office (PMO) has been set up under the leadership of NDRC to manage implementation of the Institutional Development & Capacity Building (IDCB) component. The PMO carries out the following tasks:

- Overall implementation of the IDCB component;

- Preparation of annual plans and budgets for the IDCB sub-components;
- Obtaining approval of the annual plans, budgets, etc. from NDRC, MOF and World Bank as needed;
- Implementation of the annual plans as specified;
- Selecting parties (consultants, proponents, etc.) to be contracted in accordance with World Bank procurement guidelines or in accordance with the procedures specified in the PIP;
- Sign contracts with consultants, proponents, etc.;
- Authorizes payments from the Special Account according to schedules agreed in the contracts;
- Maintain the Project accounts (based on contracts and expenditures);
- Reporting on progress of CRESP, including quarterly and annual reports which include both technical and financial reporting;
- Communication about CRESP to relevant stakeholders in the form of meetings, publications, newsletters, etc.
- Organize and conduct meetings;
- Prepare Phase 2 of CRESP;
- Monitor progress and take corrective actions when needed;
- Implement the GOC Partnership idea;
- Prepare for and facilitate World Bank supervision and evaluation missions;
- Other tasks relevant for smooth implementation of CRESP.

Steering Committee A Multi-agency Steering Committee has already been set up for the program. The committee is chaired by the National Development and Reform Commission (NDRC), and includes representatives from the legislative working committee of the National People's Congress, the Office of Legislative Affairs of the State Council, MOF, the People's Bank of China, the Ministry of Science and Technology (MOST), the Ministry of Water Resources (MOWR), the Ministry of Agriculture (MOA), the State Forestry Administration (SFA), the State Environmental Protection Agency (SEPA), the State Electricity Regulatory Commission (SERC), the State Electric Grid Company (SEGC), and the China Academy of Science (CAS) etc. It is expected that one meeting per year will be held to report on implementation progress of CRESP and to facilitate coordination among the different parties.

Responsibilities of Steering Committee include:
- Advise and guidance of the program;
- Coordination between agencies and CRESP.

MOF The Ministry of Finance (MOF) is the "window" agency for the GEF projects in China. On behalf of GOC, MOF will be responsible for signing the GEF Grant Agreement with the World Bank, managing the Special Account (SA) and disbursing grant payments, conducting internal audits of grant use and contracting independent external auditors annually to audit the project accounts. MOF will also be responsible for on-lending the IBRD loan to investors in the 4 pilot provinces.

4 Elements of the IDCB Component and Budget

CRESP is a 10 to 12 year program, implemented in three phases. Phase 1 of CRESP has two components:
- Investment Component
- Institutional Development & Capacity Building Component

The Institutional Development & Capacity Building component in turn has 4 sub-components:
National Level Institutional Development & Capacity Building
Provincial Institutional Development & Capacity Building
Capacity Building Investors and Scale-up Support
Program Management

The sub-components are each divided into activities, which in turn can be further sub-divided into elements.The organization of the Institutional Development & Capacity Building component into sub-components and elements is given below.

	Budget(million $)
National Level Institutional Development & Capacity Building	20.82
Further Studies on Mandated Market Policy	1.0
Renewable Energy Law Implementation	1.25
Technology Improvement (TI) Wind	
Wind turbine technology transfer	7.0
Establishment of a Wind Turbine Testing Center	2.5
Development and/or Improvement of Wind Turbine Standards	0.5
Establishment of Wind Turbine Certification Capabilities	0.6
Capacity Building and Studies on Wind Resource Assessment	2.0
Capacity Building and Studies on Wind Power Electrical Engineering	1.57
Long Term Wind Turbine Design and Development Capacity Building	2.0
Technology Improvement (TI) Biomass	
CGF Biomass	2
Biomass Technology Capacity Building and Studies	0.4
Provincial Institutional Development & Capacity Building	10.6
Provincial Renewable Energy Policy Implementation	2.4
Resource Assessment (within provinces)	4.2
CGF Pilot Demonstration Projects (among provinces)	3.0
Provincial Capacity Building and Studies	1.0
Capacity Building Investors & Scale-up Support	5.2
Jiangsu	1.0
Zhangjiang	1.2
Fujian	1.5
Inner Mongolia	1.5
Program Management	3.38
PMO Operational Budget	1.94
PMO Activities (GOC Partnership, Preparation CRESP Phase II, and Outreach & Monitoring)	0.72
PMO Consultant Budget (National and International)	0.72
Unallocated	0.22
Total	40.22

5 National Level Institutional Development & Capacity Building

The National Level Institutional Development & Capacity Building sub-component has 4 activities.

- Further studies on Mandated Market Policy
- Renewable Energy Law Implementation
- Technology Improvement (TI) Wind
- Technology Improvement (TI) Biomass

The implementation of these activities is described below.

5.1 Further Studies on Mandated Market Policy

Objective

The objective of this activity is to further study the Mandated Market Policy. The Renewable Energy Law was approved by the Standing Committee of the National People's Congress (NPC) on February 28, 2005. The law, which will become effective January 1, 2006, is rather general. Details, particularly on a few key issues such as RE targets, the level of feed-in tariff, and price sharing mechanisms still need to be worked out in detail. Chinese Laws tend to set up a general framework, and leave the specific details on critical issues to the Regulations that are decided by related State Council management agencies after the Law is passed. The Renewable Energy Law is no exception. The Further Studies on Mandated Market Policy Activity will conduct in-depth policy research on a key issues related to implementation of the RE Law. The results will directly provide inputs to the Regulations under the Renewable Energy Law.

Tasks to be undertaken:

The "Further studies on Mandated Market Policy" activity comprises three elements:

- Policy Research
- Renewable Energy Planning
- Development of a National Strategies for Scaling-up Renewable Electricity Technologies (Wind, Biomass, Small-Hydro, etc.)

These elements are described in more detail below.

Policy Research:
This element will conduct research on:

1. Realistic levels of RE targets both in terms of RE share in electric installed capacity and RE share in primary energy consumption by 2010 and 2020. There is a general consensus among stakeholders that clear RE targets are required, but there exist differences on the levels of the RE targets. The NPC Environment and Resource Committee recommended that additional work is needed to determine the feasible and achievable RE targets, with sufficient rationale and justification.
2. Allocation of renewable energy targets to each province. Once the national RE targets are determined, this element will first establish the principles of provincial allocations of the RE target on the basis of economic conditions and RE resources, and then allocate these RE targets to each province for implementation.
3. The level of feed-in tariff for different RE technologies in each region. There is a general consensus that feed-in tariff should be set up at the national level with regional differences based on costs and resource conditions. Principles, time periods, adjustment, and other important factors to determine the FIT still need to be specified. This element will conduct in-depth research to determine the level of FIT for each RE technology in each region.
4. Detailed implementation mechanisms for price sharing of the incremental costs between renewable energy and conventional energy across the national grid network. Currently, there are two approaches of price sharing mechanisms: 1) setting up a RE fund from a surcharge on consumer prices, similar to the Three Gorges Fund, to pay for the price difference; or 2) requiring each provincial grid reserves certain amount of electricity sales (e.g. 0.2 Fen/kWh) in an escrow account for purchasing renewable energy. By the end of each year, the "Energy Management Agency of State Council" will check the amount of renewable energy purchased by each provincial grid, and determine inter-grid offset and balance. There exist major differences among key agencies on which approach to take as the price sharing mechanism. This element will assist in choosing a feasible price sharing mechanisms, and conduct research on detailed implementation mechanisms for price sharing across national grid. It

will recommend how to monitor the amount of renewable energy purchased by each provincial grid to avoid cheating for inter-grid balance. This element will also calculate the impacts on consumer prices of achieving the RE targets, and analyze the impacts on the poor consumer groups and consumers in different regions of the increases in consumer prices.

5. Implementation for the Special Renewable Energy Fund: how this fund would be used (e.g. the level of subsidies to rural renewable energy), how much funding would be allocated for each category listed in the draft Law, who will administer this Fund, etc.;
6. Under what conditions a feed-in tariff will change to renewable energy portfolio standard;
7. How the trading schemes would work and what the impacts are. To investigate how trading of renewable energy obligations would work, a renewable electricity trading simulation will be developed. This simulation will demonstrate the principles of renewable electricity trading among participating parties. It will include creation of trading rights (Tradable Renewable Certificates), trading and settlement of accounts. Trading will take place between participating parties. The renewable electricity trading simulation will help to understand the principles of renewable electricity trading and the impact of trading rules such as duration of the rights, settlement period and penalty level.
8. How to link the MMP to carbon trading mechanisms such as CDM in the future, and other issues.

Renewable Energy planning:
This element will assist the government in developing short-term (11th Five Year Plan) and medium/long-term (by 2020) plans for China renewable energy development. It will recommend detailed implementation strategies and action plans to meet the renewable energy targets in the short-term and medium/long-term. This should include RE applications for both the electric power sector and thermal utilization.

National strategy for scaling up renewable electricity technologies (wind, biomass, small-hydro, etc.):
The Chinese government has an ambitious plan to expand renewable electricity generation by 2020 (20 GW wind and 20 GW biomass), and requested assistance in developing a national strategy for scaling up renewable electricity technologies. This element will:

1. Develop renewable electricity development strategies for biomass and wind, and possibly also for other renewable electricity technologies (small-hydro, etc.)
2. For biomass this will include investigation of resource information on biomass availability for energy purposes at the provincial level. In China, agriculture residues are the primary biomass energy resource. Uncertainties of a reliable fuel supply at a low price and difficulties in logistics of fuel collection are major constraints to large-scale deployment of biomass fuels. This element will conduct surveys on biomass resource availability from centralized facilities (sugar mills, rice mills, agriculture farms, forest farms, and etc.) and biomass residues, at the provincial level (biomass resource assessment for the four pilot provinces will be included in Section 6.2).
3. select priorities in biomass technologies to scale up;
4. outline an implementation roadmap to scale up biomass development.
5. For wind this will include development strategies for localization of wind turbines, building on the approaches adopted by CRESP and specified in this PIP.

Eligible Expenditures

The following cost items can be covered under the “Further studies on Mandated Market Policy”:

- Consultants (international and national)
- Travel cost
- Capacity building (workshops and training)
- Publications (printing, editing and translation)
- Studies

Performance Indicators

The “Further studies on Mandated Market Policy” activity is considered successful if:

- Results of the studies are applied in regulations under the Renewable Energy Law;
- When short-term (11th FYP) and medium/long-term (by 2020) renewable energy development plans have been prepared and approved by the Government; and
- The National Strategy for Scaling-up Renewable Electricity Technologies has been prepared and approved by the government, including a clear road map.

Details are provided in Table 5.1.1.

Table 5.1.1. Outcome Indicators and Targets "Further Studies on Mandated Market Policy" activity

Indicator	Target at 3 years after start Phase 1 of CRESP	Target at 5 years after start Phase 1 of CRESP	How the target will be assessed
Study results are used in regulations under the RE Law	All study results are considered in preparing the regulations under the RE Law	All study results are considered in preparing the regulations under the RE Law	Government communication and review of the RE Law regulations.
Installed RE capacity facilitated by the law	100 MW over business as usual scenario	500 MW over business as usual scenario	Survey and comparison with business as usual scenario.
Short, Medium and Long term RE plans approved	11th Five Year Plan and medium/ long-term plan (by 2020) approved.	11th Five Year Plan and medium/ long-term plan (by 2020) approved.	Government communication and information from CRESP PMO reporting.
National Renewable Electricity Scale-up Strategies approved (wind, biomass, small-hydro, etc.)	Approved and being implemented	Under successful implementation	Government communication and CRESP PMO reporting.

The following outputs will be produced under this activity.

Table 5.1.2. Outputs "Further Studies on Mandated Market Policy" activity

Output	Target
Various studies	Before end 2006
Approved renewable energy plans	Before end 2007
National strategy for scaling-up wind electricity production	Before end 2006
National strategy for scaling-up biomass electricity production	Before end 2007

Implementation:

In the annual plan, the PMO will specify in detail which activities it intends to carry out in the coming year. This will include details on objective, scope-of-work, budget, deliverables and qualifications of consultants. After approval of the annual plan, the PMO can implement the approved activities, following World Bank procurement procedures.

The following activities are expected to be initiated in the first year of Phase 1 of CRESP. These activities will be included in the First Year Plan:

- Target Analysis, including:
  - Establish Business as usual scenario;
  - Analysis and recommendation of RE targets both in terms of RE share in electric installed

capacity and RE share in primary energy consumption by 2010 and 2020;
  - Analysis and recommendation of allocation of provincial renewable energy targets;
  - Analysis and recommendation of changing the feed-in tariff to renewable energy portfolio standard; and
  - Analysis and recommendation of trading schemes and carbon trading.
- Feed-in-Tariff Details Study, including:
  - Analysis and recommendation of the feed-in tariff (price) for different RE technologies in each region; and
  - Analysis and recommendation of mechanisms of cost equalization.
- Study on issues and options for establishing and implementing a Special RE Fund.
- Preparation of short-, medium-, and long-term RE implementation strategies.
- Development of a national scale-up strategy for biomass electricity development.
- Development of a national scale-up strategy for wind electricity development.

For each of the above 6 main topics, one contract will be issued. Workshops for consultation and training will be included in the above 6 contracts.

Budget

The total budget for the further studies on Mandated Market Policy $1.0 million.

5.2 Renewable Energy Law Implementation

Objective

This activity provides support to the implementation of the RE Law, through development of RE Law Regulation, monitoring of the Law, and capacity building for implementation of the Law.

Tasks to be Undertaken:

The "Renewable Energy Law Implementation" activity comprises three elements:
- Support to the Regulation to Implement the Renewable Energy Law
- Monitoring and Appraisal of the Renewable Energy Law
- Capacity Building for Implementation of the Renewable Energy Law

These elements are described in more detail below.

Support to the Regulation to implement the Renewable Energy Law:
The RE Regulation is supposed to define all the detailed implementation mechanisms for the RE Law. Based on the results of the policy research, this element will support preparation of the RE Regulation at the national level. In addition to the key issues outlined in the policy research, the RE Regulation should also address implementation agency arrangement, legal accountability, streamlined approval procedure, tax incentive policies, grid mandatory purchase and corresponding incentives, incentives and obligations on thermal applications of renewable energy, and other issues. This element will prepare a draft RE Regulation, conduct stakeholder consultation process, revise the RE Regulation, and submit the Regulation for approval.

Monitoring and appraisal of the Renewable Energy Law:
This element will monitor and evaluate the implementation of the Renewable Energy Law, and provide just-in-time trouble-shooting services. It will assist the implementing agency of the Law in compiling and updating a database of renewable energy development status in China, including the status of law enforcement in each province, installed capacity of renewable energy, costs and tariff of renewable

energy, renewable energy effectiveness and impacts, etc.

Capacity building for implementation of the Renewable Energy Law:
This element will build capacities of 1) government implementing agencies such as the pricing bureau and regulators; 2) the private sector such as developers, utilities, and investors; and 3) banks, through training workshops in understanding and implementing the Renewable Energy Law. These capacity building activities should target at stakeholders at both the national level and provincial level (capacity building for implementation of the RE Law in the four pilot provinces will be included in Section 6.1).

Eligible Expenditures

The following cost items can be covered under the "Renewable Energy Law Implementation":
- Consultants (international and national)
- Travel cost
- Capacity building (workshops and training)
- Publications (printing, editing and translation)
- Studies

Performance Indicators

The "Renewable Energy Law Implementation" activity is considered successful if:
- The Renewable Energy Regulations under the Renewable Energy Law are approved;
- The Renewable Energy Law can be successfully implemented; and
- The Renewable Electricity Capacity targets specified in the law are achieved.

Details are provided in Table 5.2.1.

Table 5.2.1. Outcome Indicators and Targets "Renewable Energy Law Implementation" activity

Indicator	Target at 3 years after start Phase 1 of CRESP	Target at 5 years after start Phase 1 of CRESP	How the target will be assessed
Renewable Energy Law regulations approved	Approved	Approved	Government communication
Renewable Energy Law being implemented	Renewable Energy Law actually being implemented	Renewable Energy Law actually being implemented	Survey and information from GOC.
Additional Renewable Electricity Capacity over BAU	100 MW capacity over BAU	500 MW capacity over BAU	Survey
Renewable Electricity Developers consider RE Law enabling	Most developers are aware of law and regulations	Most developers are aware of law and regulations	Survey

The following outputs will be produced under this activity.

Table 5.2.2. Outputs "Renewable Energy Law Implementation" activity

Output	Target
RE Regulation prepared and a wide range of stakeholders consulted	Before the end of Phase 1 of CRESP
A database of implementation status of RE Law established and updated	Established within first year of Phase 1 of CRESP and updated continuously
Workshops held at both national level and provincial level (excluding	6 before end Phase 1 of CRESP

the 4 pilot provinces) on how to implement the RE Law and Regulations	

Implementation:

Implementation will follow Bank procurement rule. PMO will prepare and advertise TORs, and each candidate will submit expression of interests. Those short listed firms must submit technical and financial proposals, and PMO will set up an evaluation committee and establish evaluation criteria to select the winner.

To start this activity immediately upon approval of CRESP, 3 draft TOR's have been prepared under this activity:

- Preparation of RE Regulation;
- Monitoring and appraisal of RE Law implementation; and
- RE Law and Regulations Capacity Building.

Budget

The total budget is $1.25 million. Given the time schedule of the RE Law and Regulation, development of the RE Regulation should be completed by the end of Phase 1 of CRESP. The monitoring element should be conducted throughout the three-year time period. Most of the capacity building activities would occur right after the effective date of the RE Law which is scheduled to be January 1, 2006.

5.3 Technology Improvement (TI) Wind

The Technology Improvement (TI) Wind activity is divided into 7 elements:
Wind Turbine Technology Transfer
Establishment of a Wind Turbine Testing Center
Development and/or Improvement of Wind Turbine Standards
Establishment of Wind Turbine Certification Capabilities
Capacity Building and Studies on Wind Resource Assessment
Capacity Building and Studies on Wind Power Electrical Engineering
Long Term Wind Turbine Design and Development Capacity Building

The implementation procedures of each element are described in detail in the following sections.

5.3.1 Wind Turbine Technology Transfer

Objective

The objective of the wind turbine technology transfer element is cost reduction of wind turbines and therewith reducing the cost of wind electricity. This objective will be achieved by increasing the local content of wind turbines installed in China by increasing competition. This will be achieved by supporting the development of a Chinese brand name wind turbine for which there is a demand in the market.

Establishment of a Chinese brand name wind turbine certified according to international standards will in first instance need to compete on price (while assuring the international standard quality) with the established wind turbine manufacturers in the world. Lower cost wind turbines of international quality will force the established wind turbine manufacturers to lower their cost in order not to loose too much market share. This will in first instance be for wind turbines offered on the Chinese market, but

eventually also on the international market. This will lead to a faster reduction of the wind turbine price than otherwise would occur. This approach is based on the good experience with a similar approach for other products. In particular relevant is the establishment of PV Module manufacturing in China meeting international standards. This has an impact on the PV module price internationally as cheaper modules of good quality manufactured in China compete on the international market with the established module manufacturers BP and Shell.

The wind turbines for which there is a demand are variable pitch and variable speed wind turbines. For stall regulated wind turbines there is a small and decreasing market. Therefore, the technology transfer should focus on these technologies. Wind turbines with variable pitch and variable speed are in general in the capacity range of 850 kW and higher.

The technology transfer can be arranged in different ways:

- Initially manufacture under license to build up design and production know how;
- Enter into a Joint-Venture arrangement with transfer of design and production know-how;
- Design a Chinese brand name turbine from scratch using international wind turbine design experts; and
- Buy a wind turbine company including its design and production know-how.

Mechanism

CRESP will support up to 3 initiatives to develop a Chinese brand name wind turbine with variable pitch and variable speed. The initiatives to be supported will be selected competitively based on proposals prepared by interested parties.

Eligible Proponents

All entities legally registered in China of which the majority of shares are owned by Chinese.

Performance Indicators

The wind turbine technology transfer element is considered successful if Chinese brand name wind turbines certified according to international standard are used in China on a large scale because they offer a substantial cost advantage over wind turbines offered by the established international wind turbine suppliers. The indicators to assess whether or not the wind turbine technology transfer element was successful are given in Table 5.3.1.1.

Table 5.3.1.1. Outcome Indicators and Targets Wind Technology Transfer

Indicator	Target at 3 years after start Phase 1 of CRESP	Target at 5 years after start Phase 1 of CRESP	How the target will be assessed
Chinese brand name turbines type certified according to international standard	1	3	Information from manufacturers supported and from certification institute.
Total installed capacity Chinese brand name wind turbines	15 MW	500 MW	Survey results
Cost advantage Chinese brand name wind turbines	10%	20%	Survey results and project statistics/information
Number of manufacturers of Chinese brand name wind turbine which are	1	3	Company information using standard indicators for financial health.

Indicator	Target at 3 years after start Phase 1 of CRESP	Target at 5 years after start Phase 1 of CRESP	How the target will be assessed
financially healthy			

Maximum grant support

The total budget for this element is $7 million. There will be only one request for proposals at the beginning of CRESP. CRESP can select one, two or three initiatives or reject all proposals. When 3 initiatives will be supported, it is expected that the grant support for each proposal will be between $1 and $3 million, depending on the proposals.

Under no circumstances can the CRESP grant exceed 50% of the project cost. In fact it is expected that the CRESP grant will be substantially lower than 50% of the project cost.

Activities that can be supported

The proponent is free to select the way it intends to develop a Chinese brand name wind turbine with variable pitch and speed. One of the conditions is, however, that the proposed initiative must establish the design and production know how in China. The time frame for this is not specified and left to the proponent to decide. Establishing a Chinese brand name wind turbine and acquiring the design and production know-how can be in different ways, each with its own time horizon:

- Design from scratch using a team of international and national wind turbine design experts;
- Enter into a Joint-Venture arrangement with transfer of design and production know-how;
- Buy a wind turbine company or design (including design and production know how);
- Start with manufacture under license to build-up design and production know how and design the Chinese brand name wind turbine when these capabilities have been established.

At the end of the project the Chinese brand name wind turbine needs to be type certified[1] according to international standards.

Eligible Expenditures

The following expenses categories can be included in the proposals:

- Consultants (in particular international, but also national consultants can be included);
- Travel
- Building proto-types (materials, labor, etc.)
- Purchase of design and production know-how
- Purchase of a license
- Testing and certification
- Manufacturing equipment (hardware and software)

Selection Criteria

The selection will be based on a set of criteria. Based on these criteria up to 3 “best candidates” will be selected for support. After selection, negotiations with each proponent will start to agree the details of the arrangement.

The selection criteria will include:

1. Chance of success (how likely is it that the proposed initiative will lead to the establishment of a good quality Chinese brand name wind turbine and that design and production know how is established in China? For this, among others, the quality of the business plan will be of importance.)

[1] Type certification is a specific kind of certification. Internationally two kinds of certification are used: type certification and project certification.

2. Sustainability (how likely is it that the supported proponent will remain in business and will be able to compete in the national and international market?)
3. Market (how likely is it that the supported proponent will be able to secure a market for its products?)
4. Contribution to achieving the objective of this element (how likely is it that by supporting this proponent a low cost good quality wind turbine will be available that will force the established manufacturers to lower their cost?)
5. Cost effectiveness (ratio between expected achievements and grant requested from CRESP)

Selection Process

The selection process will be organized in two stages. The reason for organizing the selection process in two stages is to be able to provide expert support for preparing the proposals in order to guarantee good quality, logical and well thought through proposals. The first round of selection will limit the number of bidders to 5 to 10 candidates (shortlist). These candidates will then be requested to prepare detailed proposals. CRESP will support the short listed candidates by cost sharing the services of international experts to prepare the proposals. The proposals need to be prepared using a standard format provided by the PMO. Proponents need to submit a combined Technical and Financial Proposal. The proposals need to be submitted before a specified deadline. After the deadline the proposals will be opened and evaluated. Up to 3 proposals can be selected. With these 3 proponent, negotiations will be started to come to an agreement how much support will be provided and the rights and obligations of the different parties. The proposals submitted and selected will form the basis for the negotiations. Details are given below.

Short Listing Process

To assist the PMO throughout the bidding process, the PMO will recruit an International Wind Turbine Technology Transfer Expert and a National Wind Turbine Technology Transfer Expert.

The international and national technology transfer experts will prepare a package to invite expressions of interest. This package will comprise:

- Invitation Expression of Interest (newspaper announcement)
- Description of the Wind Turbine Technology Transfer element, including objective, bidding procedure, selection criteria for shortlist and time schedule
- Standard Format for Expression of Interest (one in English and one in Chinese)
- Guidelines to complete Expression of Interest format

The format of the Standard Format for Expression of Interest in English will be revised and finalized by the national and international experts.

After approval by NDRC, the PMO will submit the complete package to the World Bank for No Objection.

After the NOL is obtained the Invitation Expression of Interest will be published in the main national newspapers in China (both English and Chinese). The invitation will include information where to obtain the package to express interest. Interested parties need to obtain the package to express interest, complete the Standard Format for Expression of Interest (one in Chinese and one in English) and submit it to the PMO before the deadline specified in the Invitation Expression of Interest.

After the deadline, the submitted expressions of interest will be opened and reviewed.

The review will be conducted by a Wind Turbine Technology Transfer Committee. This committee will comprise of 6 members, including the national and international technology transfer experts and a PMO representative. The composition of the committee will be submitted to the World Bank for No Objection. The committee will review the proposals and propose 5 to 10 parties to be shortlisted.

The criteria to select parties for the shortlist are:
1. Experience with wind turbine development and production
2. Financial capabilities of proponent to finance development of a wind turbine meeting international quality requirements
3. Access to the market for wind turbines in China and international
4. Ability to develop and sustain wind turbine design and production capabilities in China

The shortlist will be submitted by the PMO Executive Director (ED) to NDRC for approval. The shortlist approved by NDRC, together with the minutes of the shortlisting meeting, signed by all members, will be submitted by the ED to the World Bank for No Objection. In case the shortlist approved by NDRC deviates from the shortlist recommended by the evaluation committee, an explanation of the deviation will be included. After the NOL is received, the shortlisted parties will be invited to prepare and submit a detailed proposal.

Proposal Preparation Process

The International and National Wind Turbine Technology Transfer Experts will also prepare the Proposal Preparation Package. The package will comprise:
1. Standard Format for Wind Turbine Technology Transfer Proposals
2. Guidelines for completing the Wind Turbine Technology Transfer Proposals
3. Description of the process and procedures
4. TOR national and international wind technology transfer capacity assessment experts

The request for proposals will clearly mention that the grant for each selected proposal is expected to be between 1 and 3 million US$. The complete package will be submitted to the World Bank for No Objection.

After the NOL is received, the package is sent to all shortlisted parties. The deadline for submitting the proposals is clearly specified in the package. Proposals received at the PMO after the deadline will not be considered. These proposals are automatically rejected. Because preparing these proposals is a major undertaking at least 60 days will be allowed to prepare the proposals.

To assist proponents to think through the approach proposed and to improve the quality of proposals the proponents are strongly advised to involve international experts. To provide an incentive for doing this, CRESP will cost share the contracting of international experts for helping to prepare the proposals. CRESP will pay 50% of the international experts fee, up to a maximum of $500 per day and up to a total maximum amount of $20,000 per proponent. The cost of the international experts will need to be pre-paid by the proponent and claimed from CRESP after receipt of the consultant's invoice and submission of proof that the payment has been made and that the international consultants indeed worked on preparing the proposals for the number of days claimed. The proponents are free to choose the international experts. The above applies to all parties on the shortlist (those of which the proposal is eventually selected and those of which the proposal is eventually rejected).

The package will also include clear guidelines for asking additional clarification from the PMO. Questions for clarification can only be made in writing. Both the question for clarification and answer will be send to all shortlisted parties.

<u>The shortlisted parties need to prepare a combined technical and financial proposal.</u>

Proposal Preparation Meeting

To explain the process to the shortlisted parties, the PMO will organize and conduct a proposal preparation meeting. This meeting will be conducted in Beijing and all shortlisted parties will be invited to this meeting. The date and place of the Proposal Preparation Meeting is clearly specified in the RFP.

Capabilities Assessment Shortlisted Parties

During the 60 days allowed for preparing the proposals, the PMO will organize an independent assessment of the capabilities of the shortlisted parties. This needs to be done by consultants strictly independent from the proposal solicitation and/or evaluation process. The TOR's for this will be prepared as part of the proposal package (see above). The PMO will make sure that the assessment of all shortlisted parties is completed before the deadline of submitting the proposals. The assessment report will be used in evaluation of the proposals. This evaluation is of particular importance for parties involved in manufacturing wind turbines at the moment.

Proposal Evaluation Process

The Wind Turbine Technology Transfer Committee will also evaluate the proposals. Immediate after the deadline for submitting the proposals the committee will meet to open the proposals. Each committee member will receive one copy of the combined technical and financial proposals and a copy of the capacity assessment report of all shortlisted bidders. After that, each member will evaluate all proposals and make a ranking using the above ranking/evaluation criteria. The capacity assessment report must also be taken into consideration. Each member will also need to prepare a written justification for the ranking. Each member will also need to provide written information on proposed modifications before accepting and financing each proposal. This can relate to technical or financial (budget) aspects.

After evaluating the proposals individually the committee meets again to compare notes. Based on the discussions, the committee will need to prepare an overall ranking and prepare a consensus justification for this ranking. This committee will then need to indicate which proposals should definitely not be supported (from the bottom-up) and which proposals are recommended for support (from the top down). The proposals in-between are kept as reserve options. All this needs to be documented in the evaluation report. The evaluation report also needs to include the contributions of the individual members (ranking, justification of the ranking and modifications required) and the consensus required modifications to the proposal before contracting. This is of course most important for the proposals recommended for funding, but needs also to be done for proposals kept as reserve. It is stressed that it is very important to document the results of the evaluation process in detail for auditing purposes.

The proposals kept in reserve (between rejected and recommended for funding) may be considered in case the negotiations with one of the proposals recommended for funding is unsuccessful.

The ranking made by the evaluation committee will be sent by the PMO ED to NDRC for approval. The ranking approved by NDRC, together with the technical evaluation report prepared by the evaluation committee and signed by all members, will be sent by the PMO ED to the World Bank for No Objection. After obtaining the World Bank No Objection negotiation with the selected proponents can start. The financial proposals prepared by the proponents form a basis for the negotiation. The negotiation will mainly focus on reaching agreement on the modifications required as specified by the evaluation committee. With respect to the financial proposal, first an assessment needs to be made for each proposal if the proposed budget is reasonable for the work and approach proposed in the technical proposal. The total budget should not be too low or be excessive. Also the grant requested from CRESP must be reasonable. It can under no circumstances exceed 50% of the project cost, and is in fact expected to be much lower than 50%. The committee also needs to make an assessment of the likeliness the proponent can secure the other financing required. It is also possible that the budget needs to be reduced to allow supporting other proposals. The result of the negotiation will be an agreed technical and financial proposal with agreed support from CRESP. The proponent will be asked to revise their proposals accordingly and re-submit these. After approval of the re-submitted proposals, the revised proposals will form an integral part of the Wind Turbine Technology Transfer contract between the PMO and the proponent. The contracts, including the revised proposals, will need to be submitted for final approval by NDRC and World Bank No Objection.

Reporting Requirements Proponent to PMO

In the Wind Turbine Technology Transfer contracts the reporting requirements of the proponent to the

PMO will be specified. This will depend on the proposed projects.

Reporting Requirements PMO

The PMO will report every 3 months on the progress of this element.

Payment Schedule

The payment schedule must be clearly specified in the contract signed by the PMO and the proponent. Payments will be released after meeting clearly specified milestones. The milestones and grant amount paid after these milestones vary from project to project.

Process Timing Summary

Table 5.3.1.2. Summary of Steps and Timing Wind Turbine Technology Transfer Element

Activity Completed	Months after Start
1. Recruitment International and National Wind Turbine Technology Transfer Expert	Start
2. World Bank NOL on package to invite expression of interest	1
3. World Bank NOL on composition Wind Technology Transfer Evaluation Committee	1
4. Wind Technology Transfer Evaluation Committee contracted	1
5. Invitation of expression of interest issued/advertised	1
6. Deadline for expression of interest	2
7. World Bank NOL shortlist	2.5
8. Deadline for submission proposals	5
9. Submission of ranking proposals, based on technical evaluation, to World Bank	6
10. World Bank NOL on ranking and selection of proposals for negotiation, based on evaluation of technical proposals	6.5
11. Negotiations finished and World Bank NOL on proposed contracts received	7.5
12. Contracts signed	8

Budget and Disbursements

The total budget for Establishing Wind Turbine Technology Transfer is $7 million. Part of this budget will be used for the selection process and for assisting companies to prepare good proposals(the details are given in table 5.3.1.3). The resources required for this are estimated at $323,000, or 4.6% of the total budget. It should be noted that a substantial cost share from selected wind turbine manufacturers is expected.

Table 5.3.1.3 Estimated Budget for Wind Turbine Technology Transfer Selection ($)

Item	Days	Fee	Reimbursable	Total
International Wind Turbine Technology Transfer Expert	60	$800/day	$20,000	$68,000
National Wind Turbine Technology Transfer Expert	100	$200/day	$3,000	$23,000
International Technology Transfer Capabilities Assessment Expert	15	$800/day	$5,000	$17,000
National Technology Transfer Capabilities Assessment Expert	20	$200/day	$2,000	$6,000
Cost sharing support international expert to Shortlisted Parties to prepare proposals				Up to $200,000
Wind Turbine Technology Transfer	3 * 15 days	$200/day	-	$9,000

Committee (3 members)				
Total				$323,000

5.3.2 Establishment of a Wind Turbine Testing Center

Objective

The objective of this element is to establish a wind turbine testing center that is accredited according to ISO/IEC 17025 to conduct wind turbine tests included in the IEC 61400 wind turbine series of standards and other relevant standards. The wind turbine testing center will also obtain CNAL (China National Accreditation Board for Laboratories) accreditation to test according to the Chinese wind turbine standards and other relevant standards.

Mechanism

To ensure the sustainability of the Wind Turbine Testing Center the center will be set-up as a commercial undertaking by a competitive selected investor. The investor will be supported over a period of 5 to 7 years by which time the center needs to become self-financing. Potential investors are expected to be in particular existing testing, research and development, training and other centers in China. Selection of the investor will be on a competitive basis, based on proposals submitted by interested parties.

The selected investor will need to meet at least the following criteria to be eligible for support:
1. Independent with no commercial interest in wind turbine manufacturing or development;
2. Acceptable to accreditation institutions, and the government;
3. Proven commercial capabilities and able to establish a commercial self financing institution;
4. Ability to adopt best international practices; and
5. Ability to cost-share the investment in the start-up phase.

Eligible Proponents

All entities legally registered in China of which the majority of shares are owned by Chinese.

Eligible Expenditures

Under the “Establishment of a Wind Turbine Testing Center” the following cost categories can be supported:
- Consultants (national and international)
- Travel cost
- Capacity Building (workshops and training)
- Studies
- Equipment
- Certification and Accreditation

Performance Indicators

The “establishment of a wind turbine testing center” element is considered successful if the center is accredited to conduct the IEC 61400 series of tests and accredited by CNAL to test wind turbines according to the Chinese wind turbine standards. In addition, wind turbine manufacturers must use the services offered by the center and the center must be able to offer these services after CRESP support stops. The indicators to assess whether or not the establishment of a wind turbine testing center element was successful is given in Table 5.3.2.1.

Selection Process

The investor to be supported, to establish a commercial, self-financing Wind Turbine Testing Center, will be selected on a competitive basis, based on proposals prepared by interested investors. For this purpose CRESP will issue a request for proposals. The proposal package will explain what the intention of this element is, what kind of proposal is expected from interested investors and what information should at a minimum be included.

The first step of the selection process is obtaining expressions of interest to participate in the bidding process and to shortlist eligible candidates. The shortlisted investors are required to prepare a detailed proposal on how they intend to establish and operate the wind turbine testing center. The selection method for selecting the best proposal is Quality-Based Selection. In the Request for Proposals (RFP) the estimated financial support will be specified as an indication. The investor is, however, free to propose its own estimates. The investors will be required to submit both a technical and financial proposal, but in separate envelopes (two-envelop system). Selection will be based on the quality of the technical proposal. The selected investor will be invited to negotiate the contract, which includes the financial support provided by CRESP. The financial proposal prepared by the selected investor will for the basis for the negotiation on the financial support from CRESP. Upon reaching agreement and obtaining the World Bank NOL on the contract, the contract between the PMO and the investor can be signed and the establishment of the wind turbine test center can be initiated.

Table 5.3.2.1. Outcome Indicators and Targets Establishing a Wind Turbine Testing Center

Indicator	Target at 3 years after start Phase 1 of CRESP	Target at 5 years after start Phase 1 of CRESP	How the target will be assessed
ISO / IEC and CNAL accreditation to test according to IEC 61400 and Chinese standards	Accredited	Accredited	Information from testing center (accreditation certificates)
Type Tests Conducted	1	3	Information from testing center
Profitability of Wind Turbine Testing Center	Appropriate target needs to be established	Appropriate target needs to be established	

Selection Criteria

Investors need to meet the eligibility criteria listed above. To select the investor to be supported among the investors meeting the eligibility criteria, the following selection or ranking criteria will be used.

1. Relevant knowledge and experience (in wind, in testing and present accreditation);
2. Location of center and test field (central for intended clients);
3. Quality of staff;
4. Quality of accreditation plan;
5. Quality of business plan including financing plan;
6. Sustainability; and
7. Financing of investment part and financial strength.

Preparation Proposal Package

Because of the complexity and specialized nature of the subject, the PMO will recruit an International Wind Turbine Testing Expert who will be supported by a National Wind Turbine Testing Expert. These two experts will support the PMO throughout Phase 1 of CRESP for implementing this element.

The two Wind Turbine Testing Experts will prepare a proposal package. This will include:

1. A General Procurement Notice to obtain expressions of interest.
2. A clear description of this element. This will require elaboration of this section of the PIP and where necessary modification. The experts should critically review the eligibility and selection criteria and

where necessary make modifications. The experts also need to refine the evaluation procedures.
3. A detailed TOR of what is expected from the wind testing center
4. The formal Request for Proposals (RFP), based on the World Bank standard format for this.
5. TOR for experts to assess the capabilities of shortlisted investors (international and national expert).

The General Procurement Notice, approved by NDRC, should within one month after the start of the assignment be submitted to the World Bank for No Objection. The other parts of the proposal package need to be submitted to the World Bank for No Objection within 2 months after begin of the assignment.

Wind Turbine Test Center Committee

To establish the shortlist, rank the proposals and select the best proposal (top ranked proposal) the PMO will establish a Wind Turbine Test Center Committee. The committee will comprise independent national experts with expertise in relevant fields. The national and international experts who prepared the proposal package, as well as a PMO representative, will also be members of the evaluation committee. In total, the committee will have 6 members.

Obtaining Expressions of Interest

Upon receiving the NOL on the General Procurement Notice it can be published. The World Bank will arrange for its publication in UN Development Business online and in the Development Gateway's dgMarket. The PMO will arrange advertisement in national newspapers (both in English and in Chinese), relevant magazines and on the CRESP internet site. Expressions of interest need to be submitted in both English and Chinese, within 30 days after publishing the General Procurement Notice in UN Development Business.

Based on the expressions of interest, a shortlist will be established. This will be done by the Wind Turbine Test Center Committee. After approval by NDRC, the shortlist and the evaluation report signed by all committee members will be sent to the World Bank for No Objection by the PMO ED.

Request for Proposals

After receiving the NOL on the proposal package and shortlist, the RFP (which includes the TOR) will be sent to the shortlisted investors. The deadline for submitting the proposals is 60 days after sending the RFP to the shortlisted investors. The proposals must be submitted both in English and in Chinese.

The PMO will also organize a Proposal Preparation Meeting. The date, time and place of the meeting will be clearly specified in the RFP. The meeting is intended to explain the RFP and answer any questions the shortlisted investors may have.
Outside the Proposal Preparation Meeting, investors can only contact the PMO in writing for obtaining clarification. Their request for clarification and the reply of the PMO will be sent to all shortlisted investors.

Capabilities Assessment Shortlisted Investors

During the 60 days allowed for preparing the proposals, the PMO will organize an independent assessment of the capabilities of the shortlisted investors. This needs to be done by consultants strictly independent from the proposal solicitation and/or evaluation process. The TOR's for this will be prepared as part of the proposal package (see above). The PMO will make sure that the assessment of all shortlisted investors is completed before the deadline of submitting the proposals. The assessment report will be used in evaluation of the proposals. This evaluation is of particular importance for investors involved in similar work at the moment.

Evaluation of Proposals

After the deadline the PMO ED, in the presence of witnesses, will open the technical proposals and send

one copy of each of the technical proposals, together with the Capabilities Assessment Report to each member of the Wind Turbine Test Center Committee. Each member will be asked to review and score each proposal according to the procedure specified in the RFP, taking into consideration the findings of the capabilities Assessment Report. The chairman will also establish a date for the decision meeting. In the decision meeting each member will present the results of their assessment and scoring. Based on these individual assessments, the committee will establish and overall ranking and propose that the top ranked investor should be invited for negotiations.

The outcome of the evaluation process should be documented in an evaluation report, containing the results and a justification for the ranking and proposed selection. The report should also document issues to be considered during negotiation. The evaluation report needs to be signed by all committee members. After obtaining NDRC approval, the report will be send to the World Bank for No Objection.

Negotiation and Contracting

Once the NOL on the evaluation has been obtained the PMO can start negotiation with the selected investor. The PMO can involve the committee members in this negotiation process. The negotiation will not be limited to negotiation the grant support by CRESP, but also include negotiation on modifications required in the technical proposal. If negotiations are successful, the PMO will ask the selected investor to revise the proposal based on the outcome of the negotiation as the proposal will be an integral part of the contract. After receiving the revised proposal, the PMO will prepare the contract, obtain NDRC approval and request the World Bank No Objection on signing the contract. When the NOL has been obtained, the contract can be signed by the PMO and the selected investor.

If negotiations are not successful, the PMO can start negotiations with the second highest ranked investor.

Approval Process Timing Summary

A summary of the timing of the different approval steps for selecting the investor to establish the wind turbine testing center is given in Table 5.3.2.2.

Table 5.3.2.2. Summary of Timing Approval Steps Establishing Wind Turbine Testing Center

Activity Completed	Months after Start
1. Contracting the International and National Wind Turbine Testing Experts	Start
2. NOL on General Procurement Notice	1
3. Deadline Expression of Interest	2
4. NOL Shortlisted investors	2.5
5. NOL on proposal package	3
6. Submission RFP to shortlisted investors	3
7. Capabilities Assessment completed	4
8. Deadline for submitting proposals	5
9. NOL technical evaluation	6
10. NOL Contract	6.5
11. Start work	7

Reporting Requirement to PMO

The reporting requirements of the selected investor will be specified in the contract.

Reporting Requirements PMO

The PMO will report to the World Bank and NDRC every 3 months progress on this element.

Budget

The total GEF budget for establishing the Wind Turbine Testing Center is $2.5 million. Part of the budget will be used for the selection process ($123,000 or 4.9%). The balance is available for supporting the selected investor. Details on the cost for the selection process are provided in Table 5.3.2.3.

Table 5.3.2.3 Estimated Budget for Selection Investor Wind Turbine Test Center ($)

Item	Days	Fee	Reimbursable	Total
International Wind Turbine Testing Expert	60	$800/day	$20,000	$68,000
National Wind Turbine Testing Expert	100	$200/day	$3,000	$23,000
International Capabilities Assessment Expert	15	$800/day	$5,000	$17,000
National Capabilities Assessment Expert	20	$200/day	$2,000	$6,000
Wind Turbine Test Center Committee (3 members)	3 * 15 days	$200/day	-	$9,000
Total				$123,000

5.3.3 Development and/or Improvement of Wind Turbine Standards

Objective

The objective of this element is to develop and/or improve Chinese standards related to wind turbines in order to uplift these to the level of international standards for wind turbines. This includes in particular, but is not limited to the IEC 61400 series of standards.

Although China has already some wind turbine standards, these standards are not perfect and need to be harmonized with the international IEC standards for wind turbines (IEC 61400 series). Further, an appropriate Chinese certification scheme based on the international standard (IEC WT01) needs to be developed for type certification and project certification (after installation).

Development of international standards for wind turbines takes place in the Technical Committee 88 (TC-88) of the International Electrotechnical Commission (IEC). National standards are normally based on these standards, taking into account the specific requirements or conditions in the different countries. The current Chinese standards are also based on the IEC standards for wind turbines, but these need to be updated and/or changed. Also additional standards need to be developed, based on recent scientific and technical developments so that these standards can meet the special requirements or conditions in China.

Mechanism

CRESP will establish a Wind Technology Standards Working Group, which will be responsible for drafting appropriate wind turbine technology standards for China and certification standards based on the IEC standards. This Working Group will initially be supported for a period of 3 years, but this support may be continued in the other phases of CRESP. The Wind Technology Standards Working Group will prepare a work plan, which needs to be submitted to the PMO for approval. Before approving the Work Plan the PMO will obtain the World Bank No Objection. The work plan will contain a specification of the work the Working Group will carry out and the time planning. In addition the Work Plan will include a description and budget of activities that will be initiated to support the wind turbine standards development and/or improvement work. This can include the following:

- Participation in working groups of the IEC Technical Committee 88

- Participation in wind turbine standards related workshops, conferences and seminars
- Twinning with wind turbine standard developing groups abroad (in countries in Europe, USA or India)
- Testing and verifying wind turbine standards
- Other relevant activities acceptable to the PMO and the World Bank.

Performance Indicators

The "development and/or improvement of wind turbine standards" element is considered successful if new Chinese standards for wind turbines and other relevant standards have been adopted as Chinese standards (GB or industry standards) and if the CNCA adopted the certification standards proposed by the standards Working Group. Both the new Chinese standards and the certification standards should be based on international standards and assure the same level of quality. The indicators to assess whether or not the development and/or improvement of wind turbine standards element was successful is given in Table 5.3.3.1.

Table 5.3.3.1. Outcome Indicators and Targets Development and/or Improvement Wind Turbine Standards

Indicator	Target at 3 years after start Phase 1 of CRESP	Target at 5 years after start Phase 1 of CRESP	How the target will be assessed
New wind turbine Standards equivalent to IEC 61400 and others	Adopted as Chinese or Industry Standards	Issued and Implemented	Information from standards committee and copy of formal GB standards.
National wind turbine certification standards equivalent to IEC WT01	Adopted as Chinese Standards and issued and implemented	National wind turbine certification standards approved and adopted by CNCA	Information from standards committee and confirmation from CNCA

Wind Technology Standards Working Group

The wind technology standards working group will include representatives of:
- Wind Turbine Manufacturers
- Wind farm Developers
- Chinese Standardization Organization
- Certification Bodies
- Wind Turbine Testing Bodies
- Researchers, Developers and experts of Wind Turbines (academic)

This list has been proposed by the consultant who developed the Wind Technology Development Strategy during preparation. In total the commission will have 9 members. In addition, the Wind Technology Standards Working Group will be supported by an international wind turbine standards expert.

The leader of the Wind Turbine Standards Working Group will be contracted for a period of 120 days over a period of 3 years. The other members will be contracted for a period of 60 days over a period of 3 years. All members will be contracted individually. World Bank rules do, however, not allow contracting Government officials.

In the work plan the Wind Turbine Standards Working Group needs to prepare the proposed activities and deliverables should be clearly specified. Fee payments will be made upon submission of invoices and after the agreed deliverables have been produced or other milestones agreed upon have been met.

Standard Development and/or Improvement Supporting Activities

Supporting activities will be included in the plan prepared by the Wind Turbine Standards Working Group. Implementation of these activities will take place using normal implementation practices. For instance for participation in meetings the normal PMO procedures will be used. The PMO will pay for registration (if needed), purchase the ticket and provide an advance for hotel and per diem. After return the traveler needs to submit a statement of expense (SOE) and provide the required evidence (ticket stub, hotel bill, etc.). Based on the SOE the PMO will authorize payment of the balance (entitled amount minus the advance).

Eligible Expenditures

Under the "Development and/or Improvement of Wind Turbine Standards" the following can be supported:

- Consultants (national and international)
- Travel cost
- Capacity Building (workshops and training)
- Studies
- Purchase on international and national standards
- Membership fee (if required) of international wind turbine standardization bodies
- Participation fee of international conferences, seminars, workshops and meetings on wind turbine standards
- Standards testing and verification cost.

Reporting Requirements Standards Working Group to PMO

The Wind Technology Standards Working Group will prepare 3 monthly progress reports for the PMO. The standards working group will submit the report within one month after each quarter. These report can be brief and to the point, but should give the PMO a good picture of the status of developing the new wind standards. Even if there is no or very little progress, the standards working group needs to submit a status report, reporting that no progress has been made or reporting whatever little progress has been made.

Reporting Requirements PMO

The PMO will report to the World Bank and NDRC every 3 months on the progress of this element.

Process Timing Summary

Table 5.3.3.2. Summary of Steps and Timing Wind Technology Standards Working Group

Activity Completed	Months after Start
1. Contracting the wind technology standards working group members	Start
2. International Advisor contracted	1

Budget and Disbursements

The total budget for developing Chinese wind turbine standards is $500,000. The budget for the standards working group and the International Wind Turbine Standards Expert is estimated at $200,000. This leaves $300,000 for support activities like participating in the IEC TC-88 Working Groups. Details are provided in Table 5.3.3.3.

Table 5.3.3.3 Estimated Budget for Standards Work ($)

Item	Days	Fee	Reimbursable	Total
Working Group Leader	120	$200/day	$2,000	$26,000
International Wind Standards	60	$800/day	$30,000	$78,000

Expert				
8 Additional Working Group Members	8 * 60	$200/day	-	$96,000
Standards Support				$300,000
Total				$500,000

5.3.4 Establishment of Wind Turbine Certification Capabilities

Objective

The objective of this element is to establish capabilities within China for Type and Project Certification according to international quality and safety standards. Type Certification comprises design assessment, evaluation of quality management of design institution and prototype testing. Project Certification is based on Type Certification and covers the aspects of site assessment, monitoring of fabrication, transport and erection as well as witnessing of commissioning and periodic monitoring. The individual modules are concluded with statements of compliance. Certificates are issued upon the successful completion of the relevant modules.

Type Certification and Project Certification are considered crucial elements of developing a wind industry in China, competitive on the national and international markets. Establishing these capabilities in China will facilitate and accelerate the adoption of international standards for wind turbines in China. Not aiming to reach international standards in earlier attempts to establish a wind manufacturing industry, is considered one of the main reasons that success has been so limited.

Type certification can be voluntary or mandatory like in the Netherlands, Germany and Denmark. In countries where certification is not mandatory many financiers require certification to reduce the technology risk. It is expected that China will opt for mandatory certification.

In China, a certification body needs to be approved by CNCA (The China Certification Accreditation Administration). CNCA approves the certification body and establishes the implementation rules of product certification. The certification body needs further to be formally accredited by CNAB (China National Accreditation Board of Certifiers). The certification body is normally not involved in testing, but obtains the test reports from testing institutes certified by CNAL (China National Accreditation Board of Laboratories).

The National Certification Standard for Wind Turbines will be drafted by the standards working group (see section 5.3.3). The national standard will be based on the international certification standard for wind turbines IEC WT01, but will take into consideration the specific requirements of China. The Wind Turbine Certification body should be able to certify wind turbines according to the national and international standard.

Mechanism

To establish Type Certification and Wind Turbine Certification in China the PMO will provide grant support to one entity in China to establish and operate wind turbine certification cervices. These services will be provided on full commercial basis. Full cost for these services will be born by those requesting these services. The GEF grant is considered justified to overcome the initial financial barrier as initially the demand for certification cervices will be limited. This demand is, however, expected to grow. The availability of these services will by itself already contribute to a growing demand. The entity that will be supported will be selected using a Competitive Bidding Process using Quality Based Selection (QBS). In the Request for Proposals (RFP) the estimated financial support will be specified as an indication. The investor is, however, free to propose its own estimates. The investors will be required to submit both a technical and financial proposal, but in separate envelopes (two-envelop system). Selection will be based on the quality of the technical proposal. The selected investor will be invited to negotiate the contract,

which includes the financial support provided by CRESP. The financial proposal prepared by the selected investor will for the basis for the negotiation on the financial support from CRESP. Upon reaching agreement and obtaining the World Bank NOL, the contract can be signed by the PMO and the investor and the certification system can be established.

Performance Indicators

The element Establishing Wind Turbine Certification Capabilities is considered successful if wind turbine certification services are available and used. To measure success, a number of indicators have been developed and targets for these indicators have been established. Outcome indicators and targets are given in Table 5.3.4.1.

Table 5.3.4.1 Outcome Indicators and Targets Wind Turbine Certification

Indicator	Target at 3 years after start Phase 1 of CRESP	Target at 5 years after start Phase 1 of CRESP	How the target will be assessed
Number of Type Certification	1	3	From winning bidder's reports to PMO
Number of project Certification	-	1	From winning bidder's reports to PMO

Eligible Bidders

The PMO will advertise this initiative, and request expressions of interest from interested bidders. All legal entities, both within China and foreign can express their interest to participate in this bid. From all parties who expressed their interest to participate in the bid up to six will be shortlisted to prepare a bid. Criteria for shortlisting bidders includes, among others, likeliness of obtaining the required approvals for providing certification services in China (for detailed ranking criteria see below).

Eligible Expenditures

The following cost items can be included in the proposals for "Establishment of Wind Turbine Certification Capabilities":
Consultants (national and international)
Travel cost
Certification and accreditation cost
Purchase of international certification standards
Purchase and development of software
Capacity building (workshops and training)

Preparation of the Procurement Package

The PMO will recruit an International Wind Turbine Certification Expert and a National Wind Turbine Certification Expert to prepare the procurement package consisting of:

- TOR for establishing wind turbine certification capabilities in China according to international standards.
- Estimate of financial support required to establish wind certification capabilities in China
- General Procurement Notice to obtain expressions of interest
- Request For Proposals (RFP)

The PMO will obtain the World Bank No objection on all four deliverables.

Advertising/Invitation of Expressions of Interest

After the World Bank No Objection is obtained on the TOR, budget and General Procurement Notice, the

General Procurement Notice will be published in:

- UN Development Business online (UNDB online)
- Development Gateway's dgMarket
- National Newspaper
- Wind Power Development

Interested bidders must express their interest to bid within 20 days from the date posting it on UNDB online.

Wind Turbine Certification Committee

To establish the shortlist, rank the proposals and select the best proposal (top ranked proposal) the PMO will establish a Wind Turbine Certification Committee. The committee will comprise independent national experts with expertise in relevant fields. This should include an expert on certification in China. The national and international experts who prepared the proposal package, as well as a PMO representative will also be members of the evaluation committee. In total, the committee will have 6 members.

Short List

The Wind Turbine Certification Committee will review the expressions of interest and establish a shortlist. For this purpose the committee will rank the parties that expressed interest and will select up to 6 highest ranked parties. After obtaining approval from NDRC, the PMO will request a World Bank No Objection on the shortlist. Because wind turbine certification is a highly specialized field it is possible that no 6 suitable candidates can be selected. In that case the PMO will request World Bank No Objection to continue the process with less than 6, but al least 2 suitable bidders.

Ranking Criteria

The ranking criteria of candidates who expressed interest include:

- Likeliness of obtaining the required approvals for providing certification services in China;
- Experience with certification wind turbines to international standards
- Long Term sustainability
- Knowledge and experience in certification;
- Knowledge and experience in wind technology;
- (potential) Reputation with industry
- International recognition

Request For Proposals

After the World Bank NOL is obtained on the short list and the RFP package, the PMO will issue the Request for Proposals to the shortlisted bidders. The RFP will specify the deadline by which the proposals must be received by the PMO.

Proposal Preparation Meeting

To provide information on preparing the proposal and explain the RFP package, the PMO will organize a Proposal Preparation Meeting. The date, time and place of the meeting will be clearly specified in the RFP. Shortlisted bidders are strongly advised to attend that meeting.

Opening and evaluation of the Proposals

The Wind Turbine Certification Committee will evaluate the proposals. The committee will evaluate the bids according to World Bank guidelines and specifications in the RFP. After completing the evaluation the committee will prepare an evaluation report which will include the scoring of the individual

committee members, an overall scoring, justification for the ranking and points that need to be addressed during negotiation. The evaluation report will need to be signed by all committee members. After obtaining NDRC approval, the PMO will sent the results of the evaluation (selected party and evaluation report) to the World Bank for No Objection.

Evaluation Criteria

Detailed evaluation criteria will be specified in the RFP. These are limited to evaluation criteria for the technical proposal. Although the evaluation criteria will be proposed by the National and International Wind Turbine Certification Experts, they are expected to include:

1. Knowledge and experience on wind turbine certification
2. Quality of staff
3. Likeliness of obtaining CNCA approval and CNAB accreditation
4. Likeliness of obtaining ISO/IEC guide 65 accreditation
5. Sustainability
6. Contribution to achieving the TI Wind Component objectives

Negotiation and Contracting

After the NOL on the evaluation of the technical proposal and selecting the best qualified party has been obtained, the PMO can start negotiation with the top ranked bidder. The PMO can involve the committee members in this negotiation process. The negotiation will not be limited to negotiation the grant supports be CRESP, but also include negotiation on modifications required in the technical proposal. If negotiations are successful, the PMO will ask the selected bidder to revise the proposal based on the outcome of the negotiation as the proposal will be an integral part of the contract. After receiving the revised proposal, the PMO will prepare the contract and request NDRC approval and World Bank No Objection on signing the contract. When the NOL has been obtained, the contract can be signed by PMO and the selected bidder.

Grant Payments

Upon signing of the contract, the winning bidder can submit an invoice to the PMO for 15% of the contract value. The PMO will authorize payment of the invoice without delay. After the initial payment the winning bidder can submit invoices for agreed amounts after meeting agreed milestones, which are clearly specified in the contract. It is expected that there will be 3 of these milestones each allowing to submit an invoice for 20% of the contract value. The balance will be paid after completion of the contract. The actual number of milestones, milestones and amount payable after meeting the milestones are specified in the contract.

Approval Process Timing Summary

A summary of the timing of the different approval steps for selecting the wind turbine certification body is given in Table 5.3.4.2.

Table 5.3.4.2. Summary of Timing and Approval Steps Wind Turbine Certification

Activity Completed	Months after Start
Contracting the International Wind Turbine Certification Expert and National Wind Turbine Certification Expert	Start
NOL on TOR, budget, General Procurement Notice and RFP	1
Advertising	1.5
Deadline for Expression of Interest	2.5
Contract Wind Turbine Certification Committee	1.5
NOL on Shortlist	3.0

Issue RFP	3.5
Deadline for Bids	5
Opening Technical Proposals	5
NOL Technical Evaluation Report	6
NOL Contract	6.5
Start activity	7

Reporting Requirement Winning Bidder to PMO

The reporting requirement of the winning bidder to the PMO will be clearly specified in the contract. The objective of the reporting is to enable the PMO to monitor progress and to assess if the winning bidder meets the requirements specified in the contract. It is expected that reports will be required on a quarterly basis.

Reporting Requirement PMO

The PMO will report to the World Bank and NDRC on a 6 monthly basis the progress of implementing this contract.

Budget

The total budget for Establishing Wind Turbine Certification Capabilities in China is $0.6 million. The budget will cover the selection process and funding of the proposal of the selected bidder. The cost of the selection process is estimated at $37,000 or 6.2% of the total budget. A cost break down is given in Table 5.3.4.3.

Table 5.3.4.3 Estimated Budget for Selection Wind Turbine Certification Institute ($)

Item	Days	Fee	Reimbursable	Total
International Wind Turbine Certification Expert	20	$800/day	$10,000	$26,000
National Wind Turbine Testing Expert	20	$200/day	$1,000	$5,000
Wind Turbine Certification Center Committee (3 members)	3 * 10 days	$200/day	-	$6,000
Total				$37,000

5.3.5 Capacity Building and Studies on Wind Resource Assessment

Objective

The objectives of the “Capacity Building and Studies on Wind Resource Assessment” are: (a) to standardize wind resource assessment methodologies used in China to ensure that activities carried out at the national, provincial and sub-provincial levels are comparable; (b) to establish a central database of wind resource and wind farm data; and (c) to develop software for micro-siting of wind turbines on wind farms that meets the special requirements and conditions in China.

Activities of wind energy resource assessment in China can be carried out on three levels:

- Total and the technical exploitable wind energy resources. Total wind resources can be estimated based on wind speeds measured by satellites or wind speeds measured by meteorological stations. Not all of the resources are exploitable. This depends on the land use, topography, access, distance to the grid, etc. By overlying general wind resources maps with land use, topography and grid maps (in GIS systems) the technical exploitable wind resources can be assessed.

- The economical exploitable amount of wind energy resource. Not all technical exploitable wind resources are economic. This depends on the cost of constructing windfarms, the wind resources, the

cost of operating the wind farm and the tariff. To assess the economic exploitable wind resources the financial viability of exploitation of the wind resources needs to be estimated.

- Micro-siting of wind turbines in wind farms. To optimize electricity production from windfarms, micro-siting of wind turbines is important. This is done based on models that calculated the optimal position of wind turbines in a wind farm based on wind measurement data, topography, characteristics of the wind turbines (number, capacity, make, type, height, etc.).

To date, domestic institutes in China have carried out the following activities on wind energy resource assessment:

- The China Meteorological Administration (CMA) is in charge of the wind energy resource assessment as preparation for the construction of large wind farm in China. The National Development and Reform Commission commissioned this activity in October 2003. CMA is responsible for organizing the investigation of wind energy resource in China and compiling the wind energy resource map on the altitude of 10m, based on wind measurement data from more than 2500 observation stations in China.

- The China Water Resources & Hydropower Engineering Consultant Group Corp. (CHECG) is in charge of the technical management for the preparation of the construction of large wind farm in China. There are two international collaboration programs on wind energy resource in progress. One is a UNEP wind energy resource assessment program, in cooperation with NREL, to make the high resolution maps of annual mean wind speed and wind power density over the inland and near seas of one million sq km in China. Another is the UNDP wind measuring program, in which CHECG undertakes the wind measurement at 10 large wind farms in China and assesses the wind energy resource, and furthermore makes the synthesis assessment by analyzing other factors of site selecting of wind farms.

Tasks to be undertaken

The "Capacity Building and Studies on Wind Resource Assessment" element comprises five tasks:

- Establishing the methodologies and criteria for assessment of wind energy resources in China;
- Developing the China wind energy resource map and setting up a national wind energy resource database;
- Estimating technical and economic exploitable wind resources;
- Developing software for micro-siting of wind turbines in wind farms in China;
- Providing capacity-building for wind energy resource assessment.

These tasks are described in more detail below.

<u>Establishing the methodologies and criteria for assessment of China wind energy resources</u>
It is necessary to establish consolidated methods and criteria for China wind energy assessment in order to make these assessments, carried out at different levels (national and regional), comparable. Wind energy resource includes economical exploitable amount and total available exploitable amount for programming. The assessment methods include: wind energy measuring, statistical analyses and the selection and development of assessment model for wind energy resource. The assessment methods are not limited to the wind energy assessment handbook of NREL and those supported by UNEP, but must be based on international experience.

<u>Developing the China wind energy resource map and setting up a national wind energy resource database</u>
Based on the research results of the NDRC wind energy resource assessment at the altitude of 10m, and applying appropriate mathematical models, the wind speed and wind power density at higher altitudes will be calculated. The calculated values will be compared with actual measurements at higher altitudes where available to fine-tune the mathematical models. The results obtained in this way will be used to prepare wind maps for altitudes relevant for wind development. This task will also establish a database (national wind energy data bank) for measured and calculated wind data.

Estimating technical and economic exploitable wind resources

Combining the China wind energy map (based on instrumental observation and modeling) with GIS data will provide information on technical and economic exploitable energy resources. Based on these results wind maps will be prepared of technical and economic exploitable wind resources. These maps will enable identification of potential sites for wind farm development and for conducting detailed wind resource measurements using measuring towers up to 60 meters.

Developing software for micro-siting of wind turbines on wind farms in China

This task will develop software for wind energy resource assessment and micro-siting of wind turbines on wind farms. This software will be based on internationally commercial available software, which will be adopted to address the specific conditions in China.

Providing capacity-building for wind energy resource assessment

This task will disseminate wind resource data and information on wind resource assessment methodologies. This will be done through organizing workshops and seminars and by providing training on wind energy resource assessment and micro siting of wind turbines on wind farms. This task will also provide technical support for regional wind energy assessments.

Eligible Expenditures

The following expenditure can be covered under this element:

- Cost of consultants (international and national, covering fees, travel, lodging and other cost)
- Goods (including equipment (computers, plotters, scanners, etc.) and supplies (paper, cartridges, etc.)
- Software
- Travel
- Capacity building (workshops and training)
- Studies
- Publications (printing, editing and translation)
- Participation in national and international workshops and seminars related to wind resource assessment

Implementation Mechanism

Implementation will follow Bank procurement rules. For each task under the Capacity Building and Studies on Wind Resource Assessment element, the PMO will prepare a TOR and requests expressions of interest from qualified consultants through advertising. From the consultants who expressed interest the PMO will make a shortlist and ask the shortlisted consultants to prepare a technical and financial proposal. The PMO will establish a Resource Assessment Evaluation Committee to evaluate the proposals and select the best proposal.

The activities can be started immediately after the effectiveness of CRESP

Performance Indicators

The “Capacity Building and Studies on Wind Resource Assessment” element is considered successful if:

- The wind resource assessment methodologies developed in the CRESP project are accepted nationally and applied in resource assessment in China;
- If national standards for wind resource assessment have been adopted;
- Using numerical model to simulate the vertical profile of near surface wind speed, and the wind energy resource distribution map has been worked out;
- The national-wide distribution map of exploitable wind energy resource, has been worked out, and is used to identify the potential site of macro-scale wind farms;
- Reliable information on exploitable wind resources in the pilot provinces and possibly other provinces is available;

- The national wind energy resource database and wind farm database have been established and is accessible to the public;
- The micro-siting software for wind farm which can meet the requirements or conditions in China has been developed.

The indicators to assess whether or not the "Capacity Building and Studies on Wind Resource Assessment" element is successful is given in Table 5.3.5.1.

Reporting Requirement to PMO

The reporting requirement to the PMO of the selected proponent will be clearly specified in the contract. The objective of the reporting is to enable the PMO to monitor progress and to assess if the winning bidder meets the requirements specified in the contract. It is expected that reports will be required on a quarterly basis.

Reporting Requirement by PMO

The PMO will report to the World Bank and NDRC on a 6 monthly basis the progress of implementing this element and its contracts.
Budget

The total budget for eligible expenditures for this element is $ 2 million. Details will be provided in each annual plan.

Table 5.3.5.1. Outcome Indicators and Targets Capacity Building and Studies on Wind Resources Assessment

Indicator	Target at 3 years after start Phase 1 of CRESP	Target at 5 years after start Phase 1 of CRESP	How the target will be assessed
The wind energy resource assessment methodologies developed in the project are accepted and applied national-wide	Accepted by 75 % wind sector stakeholders	Accepted by 80 % wind sector stakeholders	Survey among wind sector stakeholders
The wind energy resource assessment methods developed in the activity are accepted and applied national-wide	Accepted	Accepted	Information from National Bureau of Standards
Using numerical model to simulate the vertical profile of near surface wind speed	Accomplished	Accomplished	Information obtained from the reports to PMO by the supported institutes
Worked out the national-wide distribution map of wind energy resource; Setup of the national wind energy resource database	Accomplished	Accomplished	Information from the reports to PMO by the supported institutes and investigation
Worked out the national-wide distribution map of economic exploitable wind energy resource; Setup of the national wind farm database	Accomplished and provided the detailed information for at least 20 wind farms	Accomplished and provided the detailed information for at least 50 wind farms	Information from the reports to PMO by the supported institutes and investigation
Providing the credible exploitable wind energy data, at least in the four pilot provinces	Yes	Yes	Information from the reports to PMO by the supported institutes and investigation

Indicator	Target at 3 years after start Phase 1 of CRESP	Target at 5 years after start Phase 1 of CRESP	How the target will be assessed
Developing the software for resource assessment and micro-siting for wind farm used in China	Accomplished	Accomplished	Information from the reports to PMO by the supported institutes and investigation
Organizing workshops/seminars and providing training on technology criterion and methods	6	20	Information from the reports to PMO by the supported institutes and investigation

5.3.6 Capacity Building and Studies on Wind Power Electrical Engineering

Objective

The objective is to support capacity building and studies on Wind Power Electrical Engineering, which includes: (a) Consultation for authorities to draw up planning schemes of wind power and specification of wind farms integration; (b) Technical supports for the grid integration of wind farms and resolving technical problems in electrical areas of wind farm projects.

As power source, wind power is characterized by intermittence and undispatchability. When embedded in power grids, wind farms supply clean energy to power grid. This can, however, be associated with adverse impacts on the steady operation and power quality of the grid system. With increasing capacity of wind farms and increasing proportion of wind power in district grids, electrical engineering problems such as grid integration of wind farm need to be solved. The capacity of power grids to accept the wind power has been a bottleneck restricting the wind power progress, especially in areas located at the end of the grid system with abundant wind resources.

The following problems have taken place in provincial and district grids where wind farms are located, even though the size of wind farms and the share of wind electricity is still relative small in China:

- Capability of peak load and frequency regulation and reserved capacity of district grid is insufficient to meet the demand of wind power development.
- The power output of wind farms was limited and not optimal because of the weakness of the local network in which the wind farms are integrated. This also leads to voltage instability and sometimes to voltage collapse.
- Seasonal wind turbine outage and occasional outage caused by weakness of grid after construction of wind farms.
- The unstable voltage was clearly noticeable as it reduced the brightness of electric lights and caused flickering at locations close to wind farms.

With more and larger wind farms being put into operation, the problem of grid integration of wind farms has become more and more prominent. Therefore, the technical aspects of integration of wind farm into grid systems and other electrical problems related to wind farm projects must be studied and recommendations must be made on how to solve these technical problems. Both technical and economic factors should be taken into consideration. The study should contribute to solving the problems related to integration of wind farms in grid systems, one of the barriers to large scale wind development in China.

Tasks to be Undertaken:

The “Capacity Building and Studies on Wind Power Electrical Engineering” element comprises four tasks:

- Preparation of specifications for grid integration of wind farms;

- Provide assistance for preparation of regional or grid system wind farm development plans;
- Provide technical support and trouble shooting services for integration of wind farms in power grids;
- Organize workshops and technical training activities in electrical engineering of wind power.

These tasks are described in more detail below.

Preparation of specifications for grid integration of wind farms

Integration of large wind farms will effect the load flow distribution of grid power, the power quality and voltage stability. Based on the operating status investigation of existing wind farms, the project will put forward a technical scheme of grid integration of wind farms that can ensure either the safe and reliable operation of power system or the normal power generation of wind farms. Under this task also specification for grid integration of wind farms will be prepared. The specifications will form the basis for the design, construction and operation of wind farm projects.

Provide assistance for preparation of regional or grid system wind farm development plans

1. Prepare wind power development plans for different grid systems in province/autonomous regions with abundant wind resources.

The development plan of grids with wind farms would take into account the impact of wind farm operation on power transfer, transmission lines, voltage level of grid node, regulation mode of system reactive power and voltage, and reserved capacity of the system. This will be done by comparing technical and economic characteristics of different options of wind farm integration, to determine the maximum installation capacity and the best grid integration option. Design and Select an optimal grid configuration after determining installation capacity of a wind farm based on wind resources.

Compile program and software suitable to Chinese conditions to draw up wind power development schemes. Based on general power system analysis software, extend a wind power portion in an advanced simulation platform using both digital simulation and analog simulation methods. Fulfill the long and medium term wind power development scheme of Inner Mongolia Autonomous Region and Jiangsu Province.

2. Prepare a proposal for optimizing electric equipment arrangement in wind farms and operation and dispatch rules of wind farms.

The optimization of electric equipment arrangement in wind farm should be studied because there is a difference between the arrangement principles of wind farm and coal power plant, due to terrain. Wind farms in a large scale are required to take part in peak load regulation and frequency regulation by grid in some developed countries of wind power. The wind farms will face the technical problems such as power control and dispatch with increasing proportion of wind power into the grid. This project will research power control and dispatch approaches related to wind farms, and conduct case studies of typical wind farms in Inner Mongolia Autonomous Region, Jiangsu、Zhejiang and Fujian Provinces.

Provide technical support and trouble shooting services for integration of wind farms in power grids

1. R&D of the dynamic reactive power compensation devices for wind farms.

The voltage deviation and fluctuation in PCC (point of common coupling) of wind farms is a key technical problem of grid integration, and dynamic reactive power compensation is an important technical means for solving the problem. This project will study and develop dynamic reactive power compensation devices suitable for wind farms and put them into operation in typical wind farms of pilot provinces.

2. Provide assistance where problems with integration of wind farms in power grids are apparent.
3. Undertake related electric power performance tests after wind farms integrated into power systems.
4. Take part in making up wind power standards in electrical fields.

Organize workshops and technical training activities in electrical engineering of wind power

Organize workshops and training activities based on above mentioned tasks to disseminate research results and build capacity on wind farm development in China.

Eligible Expenditures

The following cost items can be covered under the "Capacity Building and Studies on Wind Power Electrical Engineering" element:

- Consultants (international and national)
- Goods (such as computers, scanners, other office requirements etc.)
- Prototype R&D (materials, staff)
- Software
- Travel cost
- Capacity building (workshops and training)
- Publications (printing, editing and translation)
- Studies

Performance Indicators

The "Capacity Building and Studies on Wind Power Electrical Engineering" element is considered successful if:

- Specifications for integration of wind farms in power grids have been developed and accepted;
- Wind farm development plans for specific geographic areas or grid systems have been prepared and the results have been disseminated. This should at least include Inner Mongolia Autonomous Region and Jiangsu Province;
- Software for wind power development schemes suitable to Chinese condition have been developed and put into use;
- The wind power development schemes in grid schemes of provinces or autonomous regions with abundant wind resources has been accepted;
- The proposal of regulation about grid control and dispatch has been accepted by related sectors;
- The dynamic reactive power compensation devices for wind farms has been developed and put into use in wind farm integration systems;

Capability of Electric power performance tests after integrated wind farms into power systems has been established, and put into use.

Details are provided in Table 5.3.6.1.

Table 5.3.6.1. Outcome Indicators and Targets Wind Power Electrical Engineering element

Indicator	Target at 3 years after start Phase 1 of CRESP	Target at 5 years after start Phase 1 of CRESP	How the target will be assessed
Specifications for integration of wind farms in power grids have been developed and accepted	Grid integration research conducted at 10 wind farms. The specifications have been accepted by enterprise operating wind farms or as industrial standard.	Specifications have been applied by 20 wind farms. The specifications have been accepted as national standard.	Evaluation report of related sectors.
Organize workshops and training activities.	6 workshop and 10 training classes conducted.	12 workshops and 20 training classes conducted.	Annual reports and First phase close report of CRESP.
Software for wind power development schemes suitable to Chinese condition developed, and used.	Software developed and applied in 2 provinces /autonomous regions	Software developed and applied in 5 provinces /autonomous regions	Evaluation report of sectors. User's reports. Acceptance reports of provinces
Proposal about optimizing electric equipment arrangement, and operation and dispatch rules of wind	Case studies in 5 wind farms. It has been accepted by dispatch sectors of SGC as	Case studies in 105 wind farms. It has been accepted by dispatch sectors of SGC.	Evaluation report of related sectors

farms	trying out rules.		
The dynamic reactive power compensation devices for wind farms	Have been applied in 3 wind power projects.	Have been applied in 6 wind power projects.	Evaluation report of related sectors. User's reports.
Electric power performance tests after wind farms integrated into power systems	Have been applied in 3 wind power projects.	Have been applied in 6 wind power projects.	Evaluation report of related d sectors. User's reports.

Implementation:
Implementation will follow Bank procurement rule. PMO will prepare and advertise TORs, and each candidate will submit expression of interests. Those short listed firms must submit technical and financial proposals, and PMO will set up an evaluation committee and establish evaluation criteria to select the winner.

The activities can be started immediately after the effectiveness of CRESP

Reporting Requirements to PMO

The reporting requirement of the selected proponent to the PMO will be clearly specified in the contract. The objective of the reporting is to enable the PMO to monitor progress and to assess if the winning bidder meets the requirements specified in the contract. It is expected that reports will be required on a quarterly basis.

Reporting Requirement by PMO

The PMO will report to NDRC and WB on a 6 monthly basis the progress of implementing this contract.

Budget and Disbursement Estimates

The total budget for the Capacity Building and Studies on Wind Power Electrical Engineering is $1.57 million.

5.3.7 Long Term Wind Turbine Design and Development Capacity Building

Objective

The objective of the "Long Term Wind Turbine Design and Development Capacity Building" element is to create a pool of well-trained wind energy professionals needed by a growing wind industry in China.

According to the situation in China, long term wind turbine design and development capacity building should be conducted at three levels, to meet the demands in the growing wind power industry.

• The first level will be aimed at senior professionals in China, such as general engineers engaged in the R&D of wind turbine and wind power engineering as well as the senior researchers engaged in basic R&D in wind power application. The training will be focused on international technology cooperation through the wind power projects and short-term training courses given in China and abroad.

• The second level will be aimed at intermediate professionals in China, such as the graduates and postgraduates who are working for M.Sc./M.Eng. or Ph.D. in relevant fields (mechanical and electrical engineering etc.). The training will be focused on training courses given abroad or on writing thesis for degrees abroad.

• The third level will be aimed at university students interested to work on wind, as well as junior

technician with some practical experience. The training will be focused on establishing the Wind Power Specialty, conducting elective courses or short-term training workshops etc.

Mechanism

The mechanism adopted to support long term wind turbine design and development capacity building is to work with interested universities in China to develop, in cooperation with the wind industry, wind technology training courses and modules. This can include guest lecturers by foreign wind turbine experts, training modules or courses given abroad and training of trainers in China or abroad. The methodology for selecting the universities to be supported will be decided during implementation. The selected universities will be requested to prepare detailed combined technical and financial proposals for providing long term wind turbine design and development capacity in China. These proposals will be reviewed and negotiated.

Performance Indicators

The "Long Term Wind Turbine Design and Development Capacity Building" element is considered successful if a large number of university graduates and experts working in the wind power sector, well trained in wind turbine design and development, are employed in the wind energy sector in China, and if the universities supported will continue the courses and modules in wind energy after the support of CRESP ends. The indicators to assess whether or not the long term wind turbine design and development capacity building element was successful is given in Table 5.3.7.1.

Table 5.3.7.1. Outcome Indicators and Targets Long Term Wind Capacity Building

Indicator	Target at 3 years after start Phase 1 of CRESP	Target at 5 years after start Phase 1 of CRESP	How the target will be assessed
Number of senior professionals trained in wind energy	20	100	Information from the senior professionals supported
Number of intermediate professionals trained in wind energy	50	200	Information from the intermediate professionals supported
Number of students trained in wind energy	150	400	Information from the students supported

Selection Process

The process of selecting universities will be decided during implementation. The PMO, in consultation with NDRC and the World Bank team, will propose a suitable methodology. After approval of this methodology by NDRC and the World Bank's no objection the selected universities will be requested to prepare detailed proposals.

Eligible Universities

Universities in China providing Masters Degree programs in relevant technical fields (mechanical engineering, electrical engineering, others) are eligible for receiving support from CRESP for providing training to build long term wind turbine design and development capacity.

Eligible Expenditure

The following cost categories can be included in the proposals of the selected universities:

- Consultants (national and international) (this includes guest lecturers)
- Travel cost

- Capacity building (workshops and training)
- Purchase of books and training materials
- Cost of participating in international training courses, workshops and seminars
- Preparation of training materials (including printing)
- Advertising the training courses

Preparation of TOR for Universities

In order to guide the selected universities in making good proposals, the PMO will prepare a detailed TOR describing what is expected from the universities. The TOR should make clear what can be supported and what not.

The TOR will specify what will be required from the universities, but will leave sufficient room for the universities to be creative and propose innovative ways to build the required capacity. Universities are encouraged to include international expertise in wind energy training by cooperating with foreign training institutes, by involving guest lecturers from abroad, by providing training modules abroad, by including training for trainers, both in China and abroad, by internships in wind energy companies or institutions abroad, etc. The guiding principle should, however, be the needs from the wind energy sector in China. The universities should also include mechanisms to increase the ratio of students trained and students eventually employed in the wind energy sector in China. This could for instance be encouraged by including internships in wind energy companies or institutions in China, provide part of the training in wind energy companies or institutions in China, do assignments in wind industry companies or institutions in China, etc.

Preparation of Proposals

Universities are required to prepare detailed proposals for Long Term Wind Energy Capacity Building according to the TOR provided. Universities need to submit combined technical and financial proposal. Proposals need to be submitted both in Chinese and in English. The universities are free to contact the PMO for further information or clarification. The deadline for submitting the proposals is 2 months after sending the TOR to the selected universities.

Modification of the Proposals

To review the proposals and assess the improvements required, the PMO will contract an International Wind Energy Training Expert and a National Wind Energy Training Expert. The international and national experts will review the proposals and make detailed comments. The comments should provide clear guidance on what needs to be improved, changed and/or added. It should also include comments on the proposed budgets. The review can be conducted from home base. Based on the inputs from the international and national experts, the PMO will inform the universities what modification is needed. The PMO is free to add further requirements. The universities are required to modify the proposals and re-submit these to the PMO. If the proposals meet the requirements of the PMO, the PMO can prepare the contract package and submit it to NDRC for approval and after obtaining the NDRC approval to the World Bank for No Objection.

Approval Process Timing Summary

A summary of the timing of the different approval steps for selecting the university to build long term wind turbine design and development capacity is given in Table 5.3.7.2.

Table 5.3.7.2. Summary of Timing Targets Long Term Wind Capacity Building

Activity Completed	Months after Start
TOR	Start
Deadline for Submitting Proposals	2

Contracting the International and National Wind Energy Training Experts	2
Evaluation of the proposals and providing comments to the universities	2.5
Deadline for re-submitting the Proposals	3
NDRC approval and NOL on contract packages	4
Start work	4.5

Reporting Requirements to PMO

The reporting requirements of the selected universities will be specified in the contract. This will in particular include information to monitor indicators of success.

Reporting Requirements PMO

The PMO will report to the World Bank and NDRC every 3 months progress on this element.

Budget

The total budget for establishing the Long Term Wind Turbine Design and Development Capacity Building element is $2 million. Commitments of the GEF grant for contracting the universities will be made in the first half of 2006 (see Table 5.3.7.4). To assist in the evaluation of the proposals, an estimated $10,000 will be required (see Table 5.3.7.3). This is 0.5% of the total budget. The balance ($1,990,000) is available for supporting the selected proposals prepared by the universities. Further details are provided in Tables 5.3.7.4 to 5.3.7.7.

Table 5.3.7.3 Estimated Budget for Review of Wind Turbine Capacity Building proposals ($)

Item	Days	Fee	Reimbursable	Total
International Wind Energy Training Expert	10	$800/day	-	$8,000
National Wind Energy Training Expert	10	$200/day	-	$2,000
Total				$10,000

5.4 Technology Improvement (TI) Biomass

The Technology Improvement (TI) Biomass activity is divided into 2 elements:
1. Competitive Grant Facility (CGF) Biomass
2. Biomass Technology Capacity Building

The implementation procedures of each element are described in detail in the following sections.

5.4.1 Competitive Grant Facility (CGF) Biomass

Objective

The objective of this element is to encourage manufacturers of biomass energy equipment, and developers of biomass energy systems (manufacturers, institutions and others) to invest in technology improvement, which leads to improved quality and/or reduced cost. Technology improvement includes both technology transfer and technology development.

Mechanism

Investment will be encouraged by cost sharing proposals prepared by the different parties. The grant support provided will be limited to 50% of the total project cost. Proposals will be selected on a competitive basis. For the proposal, proponents will have to use a standard format (application form) prepared by the PMO. The proposals will be evaluated and ranked (for details see below). The proposals will be selected from the top down as far as the budget set for that year by the PMO allows. For approved proposals the PMO will enter into a contract with the proponent.

Although the maximum cost share is 50%, experience with similar mechanisms shows that the average cost share is in the range of 30% to 40%.

Eligible Industries and Institutions

Entities that are eligible for grant support from the Competitive Grant Facility Biomass (CGF-Biomass) would be:

Industries presently manufacturing biomass energy equipment or manufacturers with the capability to manufacture biomass energy equipment;

Institutions (e.g. research, development, testing, standardization and certification) if their activities are directly relevant to developing biomass energy systems.

It is stressed that the CGF-Biomass is open to all industries and institutions legally registered in China, fulfilling the above criteria. This could include both joint ventures between Chinese and foreign companies and fully foreign owned industries and institutions registered in China. Further, no distinction will be made between private, government owned or cooperative industries and institutions.

Eligible Technologies

The technologies eligible for support from the CGF-Biomass are:

- Biomass collection (equipment and processes)
- Biomass processing (preparation for use like size reduction, mixing, drying, etc.)
- Biomass utilization (combustion, gasification, anaerobic digestion, liquifaction, pyrolysis, etc.)

Activities that can be supported

The following activities in the above areas of the CGF-Biomass will be supported:

- Labor for research and development (proponents staff)
- Production of prototypes[2]
- Field testing of prototypes[3]
- Testing and certification
- Depreciation (or rent) of equipment used for research and development over the period and extend the equipment is used for the proposed project
- Training if required for the proposed project
- Purchase of specific software required for the proposed project
- Materials required for the proposed project
- Market studies
- Studies on improved operation of biomass conversion technologies
- Consultancy services

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2 A prototype is defined as the first unit or units resulting from design and development. The purpose of a prototype is to investigate if the design function as it is intended to do. A prototype is not intended for sale or lease.

3 Field-testing of prototypes is done to investigate how the design functions under real life conditions. The purpose is to learn from the field-testing and not to generate electricity for commercial use. Extensive measuring, monitoring and testing must be a part of a field-testing program.

- Travel cost related to the proposed project
- Identification of potential local and foreign partners for the development and production of improved biomass conversion technologies
- Studies to assess the feasibility of cooperation with local or foreign partners (joint ventures)

The following activities will NOT be supported:
- Basic research
- Investment in commercial production equipment
- Equity investment in joint ventures
- Purchase of production licenses
- Investment in biomass power plant implementation projects (testing of prototypes can be supported)
- Activities covered already by other donor funded programs
- TI outside China

Labor for research and development (proponent staff)

In order to simplify implementation, standard labor cost figures will be used. There are only three cost categories: a) senior researcher, b) researcher, and c) assistant. The standard cost figures for these categories are given in Table 5.4.1.1 below.

Table 5.4.1.1. Standard labor cost figures

Category	Labor cost[4] (Yuan/day)
Senior Researcher	400
Researcher	300
Assistant	200

Because the proponents in general will not have a system in place for monitoring the time spend on certain activities, the industries and institutions will be required to keep records of who, when and how long staff worked on the TI project supported by the GEF grant. These records need to be submitted to the PMO.

Depreciation (or rent) of equipment required for R&D

Cost of equipment used for TI activities can be supported, but only for the part that can actually be attributed to TI activities. For instance, the cost of equipment with a lifetime of 10 years, purchased for a TI project which will last 2 years, can only for 20% be attributed to the TI project, if the equipment is used afterwards for other work. Also, when equipment purchased or rented for the TI Project, but which is for 40% also used for other projects or activities, the cost can only for 60% be attributed to the TI project. The proponent will have to calculate the cost of purchased or rented equipment to the TI project. In evaluating the project, this calculation will be reviewed and if necessary corrected.

All other cost will be supported based on evidence of actual expenditure. This includes travel cost.

The above implies proper record keeping by the supported industries and institutions. The PMO will, where necessary, provide technical assistance for this and include this aspect in information and training meetings.

Size of the Projects

The minimum CGF-Biomass grant request is $10,000 (or 80,000 Yuan). Smaller proposals can not be considered because this could lead to too many small projects. This would increase the administrative workload of the PMO too much and would not be justified by the associated transaction cost.

[4] These figures apply for the first year and will increase each year with 10%.

No maximum has been established for CGF-Biomass proposals. Proposals requesting a very high grant support can clearly not be supported as this would require a large part of the available resources to just one or a few projects. It is expected that the average grant will be around $100,000 per proposal, but varying from $10,000 to $300,000.

Ranking Guidelines

To select the best proposals, the proposals will be ranked by a CGF-Biomass Proposal Evaluation Committee and an International CGF-Biomass Proposal Evaluation Expert (see below). In ranking the proposals the following aspects will be considered:
contribution to achieving the objectives of the CGF-Biomass
chances of success of the proposal
cost effectiveness

Issues of consideration in evaluation of the contribution to achieving the objective are: a) envisaged cost reduction and/or quality improvement, b) how the proposal will encourage investment in technology improvement through this proposal and in the future, c) effect of cost reduction of the project on system cost, and d) time frame in which cost reduction can be achieved (cost reduction on the short term is in general more important than cost reduction on the longer term).

In evaluating the chances of success it is important to consider that the chances of success are in general higher if: a) the proponent is strong and well established; b) strategic partners work together, in particular if there is cooperation between design, production and market parties, and c) the parties have experience in biomass TI technology improvement.

Cost effectiveness looks at the ratio of the contribution to achieving the objective of the CGF-Biomass and the financial support required from the CGF-Biomass.

Selection Criteria

To maintain a healthy competition the CGF-Biomass will aim to have a ration between approved projects and proposed projects of 50% (proposed projects exclude bad projects and projects outside the scope defined by the PMO). The best 50% of proposed projects will be supported as far as the annual budget for that tender round allows. Both the 50% and the annual budget for CGF-Biomass are to some extend flexible.

Selection Process

Each year, the PMO will issue one call for proposals. With the call for proposal the PMO will distribute: (i) the standard application form; (ii) instructions on how to complete the application form; and (iii) description of the Competitive Grant Facility Biomass. In the call for proposals the PMO will clearly specify which technology areas will be supported and the deadline for receiving the proposals. Proposals received by the PMO for whatever reason after the deadline will not be considered. Proposals need to be submitted both in Chinese and in English. The call for proposals should be issued at least one month before the first deadline. Issuing the call for proposals is the responsibility of the National Proposal Solicitation Expert (PMO staff).

After receiving the proposals, the National Proposal Solicitation Expert, with the help of an international consultant (International Biomass Proposal Solicitation Expert), will review the proposals and provide for each proposal detailed comments on missing information, areas that need further details or clarification and other improvements required. Proposals that are out of the scope defined by the PMO can be rejected right away. No comments need to be provided on these proposals. The comments on the proposals will be send to the proponents within one month of the first deadline. The proposals revised based on the comments made by the PMO must be submitted to the PMO within one month. Both the Chinese and English proposals need to be revised. In the letter with the comments the PMO will clearly specify this deadline (second deadline). Proposals received after the second deadline, for whatever reason,

will not be considered further.

The proposals received after the second deadline will be categorized by the National Proposal Solicitation Expert. Each category should have at most 5 to 7 proposals.

After that the proposals will be reviewed and ranked by a CGF-Biomass Proposal Evaluation Committee. For this purpose the PMO will establish a committee comprising 5 experts with expertise in relevant fields (for instance biomass fuel collection and processing, biomass combustion, boiler design, technology development, marketing of industrial equipment) and a PMO representative. The committee experts will be contracted by the PMO. The committee will review and rank the proposals based on the ranking guidelines and provide a written justification for the proposed ranking. The committee needs to establish an overall ranking, but might want to rank first the proposals in each category. Finally the committee needs to propose proposals for support from the CGF-Biomass based on the selection criteria. When reviewing the proposals, the committee also needs to provide comments on additional information, clarification, elaboration and modifications required. This can include lowering the grant requested. The lower grant will be approved under the condition that the overall project does not change. These requirements will need to be addressed by the proponent in the final revision. Organizing the evaluation process is the responsibility of the National Implementation Expert.

After ranking by the CGF-Biomass Evaluation Committee, the proposals will also be reviewed by an International CGF-Biomass Proposal Evaluation Expert. The Expert will also rank the proposals and provide comments on the ranking made by the CGF-Biomass Proposal Evaluation Committee. The expert will also provide comments on additional information, clarification, elaboration and modifications required, including lowering of the grant. To carry out this work, the Expert will be assisted by a national expert or a PMO staff member not involved in CGF-Biomass proposal solicitation (for instance the National Implementation Expert).

Based on the ranking prepared by the CGF-Biomass Evaluation Committee and the review by the International CGF-Biomass Proposal Evaluation Expert the PMO will prepare a list with proposals proposed for funding from the CFG-Biomass. The PMO will obtain NDRC approval on this list. After that the PMO will send the list, the evaluation results of the committee and the evaluation results of the International CGF-Biomass Proposal Evaluation Expert, together with a justification for the list to the World Bank for No Objection.

When the World Bank No Objection has been obtained, the PMO will inform the proponents on the outcome of the evaluations. The PMO can, but does not need to give an explanations for rejecting proposals. Proponents of accepted proposals will be informed that their proposal are approved, subject to changes that will be specified in the letter. The changes can include adding additional information, clarification or elaboration of certain sections or modifications. If the approved grant amount is lower than required by the proponent, the proponents needs to reflect this in the final proposal. When the grant amount is reduced the proposed activities need to remain the same. The letter will also specify a deadline by which the revised proposal needs to be submitted (third deadline). The proponent will need to submit the final proposal both in Chinese and English. The cost of translating the proposal in English will be born by the proponent and will not be considered part of the project cost.

Upon receipt of the final proposal, the PMO will check if all comments have been addressed to the satisfaction of the PMO. If not, the PMO will request an amendment of the final proposal. If yes, the PMO can prepare the CGF-Biomass Grant Agreement. The final proposal will form an integral part of the grant agreement. After the proponent return the signed grant agreement the CGF-Biomass project is operational.

CGF-Biomass Grant Agreement

For each project approved by the CGF-Biomass a grant agreement will be signed between the PMO and the proponent. In this grant agreement, signed by both the PMO (on behalf of NDRC) and the proponent, the amount of support and the activities the proponents will need to carry out for receiving

this, will be specified. The final proposal will form an integral part to this agreement. If necessary specific requirements for a particular project can be included in the grant agreement. The grant agreement will also clearly specify the reporting requirements of the proponent (see below).

Approval Process Timing Summary

A summary of the timing of the different approval steps for approving CGF-Biomass proposals is given in Table 5.4.1.2.

Table 5.4.1.2. Summary of Timing Approval Steps

Activity Completed	Months after Start
Call for Proposals Issued	Start
Deadline for submitting proposals (first deadline)	1
Comments to proponents on improvements needed	2
Deadline for revised proposals (second deadline)	2.5
Categorization, Ranking of proposals by National CGF-Biomass Proposal Evaluation Committee, review by International CGF-Biomass Proposal Evaluation Expert, decision PMO, NDRC approval and World Bank NOL	4
Letter informing proponent that proposal is approved subject to making additional revision (if needed)	4.5
Deadline for submitting final proposal (third deadline)	5
Contracts issued	6

Grant Payments

Upon signing of the CGF-Biomass grant agreement the PMO can pay the proponent 30% of the requested CGF-Biomass grant using the standard invoicing and payment practices in China.

Upon completion of the project and approval of the project by the PMO (see below) the balance (70%) can be paid. The PMO can decide to reduce the final payment if required (for instance when the actual project cost was lower than projected, if insufficient proof of expenditure is provided or is the activities carried out do not justify payment of the full grant amount).

If the proponent whishes to do so, the proponent can at any time of the project request a second advance payment of 30%. When making this request, the proponent needs to proof sufficient progress on the project to justify the second advance. The request can only be made after the first progress report has been submitted and approved by the PMO. Whether or not to approve the second advance is up to the PMO, but can only be made when the PMO considers the risk for not carrying out the agreed activities very low.

Reporting Requirement Proponent to PMO

The proponent will need to prepare one or more progress reports. The format of the progress report will be developed by the PMO and provided to the proponent once the project is operational. The intention of the progress report is to enable the PMO to monitor progress of the projects supported under the CFG-Biomass. At least one progress report about halfway of the project will be required. For projects of a duration of more than one year, the PMO may require additional progress reports. The progress reports must be approved by the PMO. The PMO will request the proponent the make revisions until the report is acceptable to the PMO.

The most important report is the final report, which will consist of a technical and financial report. The technical report should contain all information required to understand the activities and achievements of the project. This will include a clear description of the situation before the project, the activities carried

out during the project and the situation at the end of the project. The financial reporting needs to provide evidence on the total project cost and evidence that the expenditure was in line with that proposed in the

proposal. For this purpose receipts, invoices and other proof needs to be submitted on expenditure for the project. If needed, the PMO can require a more detailed investigation of the accounting for the project.

Closing of CGF-Biomass Projects

The National Implementation Expert will review the final report. If the National Implementation Expert is satisfied, he/she can call a project completion meeting. The purpose of this meeting is to review the results of CGF-Biomass projects to assess if all requirements have been met, to approve closing of the project, and release of the final payment. In such meeting a number of projects proposed for closing will be discussed. The project completion meeting will need to be attended by the Executive Director or Deputy Executive Director, the contracts manager, the financial manager and the National Implementation Manager. When the meeting agrees that the project can be closed and final payment made, a decision note will be prepared for the file, signed by all participants. This note will be added to the project file. After the note is signed, the final payment can be made and the project can be closed. It the meeting does not agree to close the project, the meeting will formulate requirements that need to be met before the project can be closed. The National Implementation Expert will continue to work with the proponent until all requirements have been met.

Project File

The PMO will keep one file for each approved CGF-Biomass project. This file should contain the following:
Original Proposal
Letter with modification requirements to original proposal
Revised Proposal
Letter informing the proponent that the proposal has been approved subject to modifications specified in the letter
Final Proposal in Chinese
Final Proposal in English
Contract between PMO and proponent
Initial Payment
Progress Report
Final Report (technical and financial)
Completion note (signed by PMO staff who participated in the meeting)
Final Payment
Additional Progress Reports (if applicable)
Second advance payment (if applicable)
Relevant correspondence with proponent
Notes of relevant telephone or other conversations with proponent on the project
Project Fact Sheet (see below)

These files will be reviewed by the World Bank supervision mission.

Project Fact Sheet

Upon completion of the CGF-Biomass project the National Implementation Manager will prepare a one page project Fact Sheet in English. This Project Fact Sheet will include information on the proponent, problem to be addressed (pre-project situation), solution (proposed project) and results (end of project situation). It further contains information on the project like project size, grant support, starting and ending date. Finally, if possible it should include information on market impact. The Project Fact Sheet should be included in the project file. The Project Fact Sheets might be bundled and published as a PMO publication at the end of Phase 1 of CRESP. The PMO has examples of Project Fact Sheets prepared for other projects.

Performance Indicators

The CGF-Biomass is considered successful if it indeed leads to additional investment in biomass power plan technology development and if these investments lead to improved products (better quality and reduced cost) for which there is a market. To measure success a number of indicators have been developed and targets for these indicators have been established. The indicators and targets are given in the Tables below. Table 5.4.1.3 contains outcome indicators and targets while Table 5.4.1.4 contains project implementation indicators.

Table 5.4.1.3. Outcome Indicators and Targets CGF-Biomass

Indicator	Target at 3 years after start Phase 1 of CRESP	Target at 5 years after start Phase 1 of CRESP	How the target will be assessed
Investment in TI for biomass power plants	$ 2 million	$ 6 million	From CGF-Biomass project files and survey among proponents to assess investments related to CGF-Biomass projects for follow-up and implementation
Number of projects of which results are applied in the market	7 projects	14 projects	Proof provided by proponents and check in the market

Table 5.4.1.4. Project Implementation Indicators and Targets CGF-Biomass

Indicator	2006	2007	2008
CGF-Biomass Projects Received	10	18	25
CGF-Biomass Projects Approved	5	9	10
Approval Ratio	50%	50%	40%
Total Budget Approved Projects	$1.1 million	$2.0 million	$3.0 million
Total Grant Approved	$0.5 million	$0.7 million	$0.8 million
Average Grant Support Ratio	45%	35%	27%

Reporting Requirement PMO

To report on implementation progress to the World Bank and others the PMO will maintain standard reporting tables on the CGF-Biomass. For each tender round the PMO will develop and maintain one grant disbursement table and one reporting status table.

Budget and Disbursements

The total CGF-Biomass budget is $2 million. Part of this budget will be used for the solicitation, evaluation and selection process. Details are provided in Table 5.4.1.5. This budget assumes 3 tender rounds. The balance ($1,837,000) is available to cost share competitive selected biomass TI related proposals. It is expected to have in Phase 1 of CRESP 3 calls for proposals. In particular the projects approved in the third round will not be finished within the 3 years of Phase 1 of CRESP. These projects will continue in Phase 2 of CRESP.

Table 5.4.1.5 Estimated Budget for Solicitation, Evaluation and Selection Process ($)

Item	Days	Fee	Reimbursable	Total
CGF-Biomass International Proposal Solicitation Expert	60	$800/day	$18,000	$66,000
CGF-Biomass Proposal Evaluation Committee	5*30	$200/day	$1,000	$31,000
CGF-Biomass International	60 days	$800/day	$18,000	$66,000

Proposal Evaluation Expert				
Total				$163,000

5.4.2 Biomass Technology Capacity Building and Studies

Objective

The objective of the Biomass Technology Capacity Building and Studies is to build biomass technology capacity at all levels through conducting workshops and training on specific topics related to biomass technology, and to conduct studies to support the development of biomass electricity projects.

Mechanism

Activities under the Biomass Technology Capacity Building element are initiated by the PMO. The activities carried out under this element are specified in the annual plan prepared by the PMO. As the annual plan requires approval from NDRC and World Bank No Objection, activities in the approved annual plan can be carried out without requiring prior approval, other than the normal procurement approvals or World Bank No Objections. Activities the PMO intends to carry out that are not in the annual plan require separate approval by NDRC and World Bank No Objection.

For approved activities the PMO will follow the established procurement procedures. The first step is always the preparation of a TOR and estimating the budget.

Activities that can be supported

The specific activities that will be supported under this element can not be specified in detail at this stage. The support needed will become apparent during project implementation. It is expected that this will be less in the first year, but increase in the second and third year of Phase 1 of CRESP. The kind of activities that can be supported is however, clearly defined.

The following activities can be supported under this element:

1. Workshops
    - Organization of workshops
    - Renting workshop facilities
    - Production of workshop materials
    - Conducting workshops
    - Participation (with or without cost share)
    - Hospitality during workshops
    - Preparation of workshop reports
    - Dissemination of outcome
    - Support participation of workshops organized by others (with or without cost share)
2. Training
    - Preparation of training material and training courses
    - Conducting training
    - Rent training room and facilities
    - Provision of training materials
    - Participation (with or without cost share)
    - Conducting information and awareness campaigns
    - Study tours
    - Organizing training abroad of individuals and of groups
    - Support participation of training organized by others (with or without cost share)
3. Meetings
    - Organize exhibitions or trade fairs

- Support participation (with or without cost share)
- Support participation in exhibitions and trade fairs organized by others

4. Studies
   - Conducting studies
   - Dissemination of results through reporting (editing, printing)
   - Dissemination of results through workshops, training and meetings (see above)

All activities need to relate directly to capacity building on biomass technology or studies which help to promote biomass electricity project implementation. For each proposed activity the PMO needs to indicate how the proposed activity will support scaling up biomass electricity generation.

Performance Indicators

The Biomass Technology Capacity Building and Studies element is considered successful if it contributes to the increasing knowledge and experience on biomass technology. The indicators to measure success are given in Table 5.4.2.1.

Table 5.4.2.1. Outcome Indicators and Targets Biomass Technology Capacity Building and Studies

Indicator	Target at 3 years after start Phase 1 of CRESP	Target at 5 years after start Phase 1 of CRESP	How the target will be assessed
Number of workshops conducted	6	-	CRESP annual and end Phase 1 reports
Number of people participated	180	-	CRESP annual and end Phase 1 reports
Number of training courses conducted	6		CRESP annual and end Phase 1 reports
Number of people trained	120		CRESP annual and end Phase 1 reports
Number of meetings supported	6	-	CRESP annual and end Phase 1 reports
Number of participants of which participation was supported	30	-	CRESP annual and end Phase 1 reports
Number of Studies	6	-	CRESP annual and end Phase 1 reports
Number of reports	6	-	CRESP annual and end Phase 1 reports

Budget

The total budget for the Biomass Technology Capacity Building and Studies is $0.4 million.

6 Provincial Institutional Development & Capacity Building

The Provincial Institutional Development & Capacity Building sub-component has four activities:

1. Provincial Renewable Energy Policy Implementation
2. Resource Assessment (within provinces)
3. CGF Pilot Demonstration Projects (among provinces)
4. Provincial Capacity Building and Studies

The implementation procedures of each element are described in detail in the following sections.

6.1 Provincial Renewable Energy Policy Implementation

Objective

The objective of the Provincial Renewable Energy Policy Implementation element is to support the 4 pilot provinces with implementing the Renewable Energy Law.

Mechanism

The mechanism for achieving this objective is supporting initiatives proposed by the pilot provinces and approved by the PMO. For this purpose, pilot provinces will prepare each calendar year a detailed plan for implementing the Renewable Energy Law or for preparing for implementation. The provincial annual plans will be discussed with the PMO and revised based on these discussions. The agreed plans will be included in the annual plan prepared by the PMO before the start of each calendar year. Because the annual plan needs to be approved by NDRC and requires a World Bank No Objection before the start of the year, the PMO needs to submit the annual plan before 1 November each year, to allow discussion and revision where required. The provincial annual plans must be submitted to the PMO before 1 October, to allow time for discussion, revision and inclusion in the PMO annual plan.

The first year plan is expected to include whole 2006 and part of 2005, depending on the effectiveness date of the first phase of CRESP. In that case, the pilot provinces need to submit the annual plan, covering that period 3 months before effectiveness to the PMO. The PMO in turn will need to submit the annual plan to NDRC and the World Bank, 2 months before effectiveness. The PMO annual plan, including the provincial annual plans must be approved by NDRC and obtain the World Bank No Objection before effectiveness.

Implementation of this activity is expected to take place in particular in the first two years of the fist phase of CRESP.

Activities included in the approved annual plan can be implemented without obtaining further approvals except the normal approvals of the different procurement steps. For each task proposed, a separate TOR needs to be prepared, consultants need to be selected and contracts need to be issued. All these tasks are the responsibility of the PMO. The PMO will, however, work closely with the provincial authorities (DRC's) in carrying out all these steps. The PMO will, however, remain ultimately responsible for initiating all activities and following the required procurement rules.

In the provincial annual plans, the pilot provinces need to provide for each task proposed the following information:

- Title
- Objective
- Expected Outputs (Deliverables)
- Tasks
- Resources required (consultants (days and fee), reimbursable (travel and other cost), other cost (equipment, materials, workshops, etc.)
- Time frame
- Number and qualification of consultants required
- If possible for each position 3 candidates to select the best qualified consultant from (if the pilot provinces are not able to provide the short list, the PMO will identify qualified candidates)

Eligible Categories

Tasks in the following categories can be included in the annual plans for the Provincial Renewable Energy Policy Implementation activity:

- Renewable electricity cost and tariff studies, including burden sharing;
- Development of provincial regulations or decrees, based on the Renewable Energy Law;
- Awareness creation on the Renewable Energy Law and provincial implementation, regulations and decrees;
- Streamlining renewable energy project approval procedures;
- Development of provincial renewable energy development strategies, including provincial 11th FYP and plans for promoting specific renewable energy technologies;
- Development of provincial initiatives to support renewable energy project implementation like financial incentives;
- Renewable energy data and information collection and dissemination;
- Developing and testing new renewable energy promotion instruments like green electricity, green counties, green manufacturers, and other new models.

Eligible Expenditures

Under this activity the following expenditures can be covered:

- Consultants (national and international)
- Travel
- Capacity building (workshops, training)
- Studies
- Promotion and advertising

Proposed Tasks

During preparation the pilot provinces identified tentative tasks to be supported under the Provincial Renewable Energy Policy Implementation activity. The list of tentative tasks is given in Table 6.1.1. The proposed tasks are listed by eligible category listed above. It should be noted that these are tentative tasks only. The pilot provinces are free to include in their annual plans these or other tasks as long as these are within the eligible categories listed above.

Performance Indicators

The Provincial Renewable Energy Policy Implementation activity is considered successful if it contributes in a significant manner to implement the Renewable Energy Law or prepares the pilot provinces for implementation. The indicators for success are given in Table 6.1.2 below.

Table 6.1.2. Outcome Indicators and Targets Provincial Renewable Energy Policy Implementation

Indicator	Target at 3 years after start Phase 1 of CRESP	Target at 5 years after start Phase 1 of CRESP	How the target will be assessed
Number of provinces in which RE law and decrees are implemented	In 3 pilot provinces	In 4 pilot provinces	From pilot provinces information and proof on file
Provincial Renewable Energy Plans developed and approved	In 3 pilot provinces	In 4 pilot provinces-	From pilot provinces information and proof on file
Development of renewable energy projects has become easier	Average approval time reduced to 6 months	Average approval time reduced to 4 months	Survey among pilot provinces and developers.

Budget

The total budget for this activity is $2.4 million. The full amount is available to support tasks proposed by the pilot provinces and approved by the PMO. It should be noted that only the total budget is given and not the budget by pilot province or by category. The allocation by province and category will depend on the approval of task in the annual plans prepared by the pilot provinces. It is the intention to have an equal distribution, but this is only possible if sufficient good quality proposals are received.

6.2 Resource Assessment

Objective

The objective of the Resource Assessment activity is to assist the pilot provinces to generate public resource data for investors and for planning purpose. This includes:

- provincial resource cost curves;
- provincial low resolution resource maps (for instance a map showing the provincial biomass resources);
- provincial low resolution exploitable resource maps (for instance a biomass resource map showing exploitable biomass concentrations)
- high resolution resource information (for instance the installation of wind masts of 70 meter height).

Mechanism

The mechanism for achieving this objective is supporting initiatives proposed by the pilot provinces and approved by the PMO. For this purpose, pilot provinces will prepare each calendar year a detailed plan for resource assessment. The provincial annual plans will be discussed with the PMO and revised based on these discussions. The agreed plans will be included in the annual plan prepared by the PMO before the start of each calendar year. Because the annual plan needs to be approved by NDRC and requires a World Bank No Objection before the start of the year, the PMO needs to submit the annual plan before 1 November each year, to allow discussion and revision where required. The provincial annual plans must be submitted to the PMO before 1 October, to allow time for discussion, revision and inclusion in the PMO annual plan.

The first year plan is expected to include whole 2006 and part of 2005, depending on the effectiveness date of the first phase of CRESP. In that case, the pilot provinces need to submit the annual plan, covering that period 3 months before effectiveness to the PMO. The PMO in turn will need to submit the annual plan to NDRC and the World Bank 2 months before effectiveness. The PMO annual plan, including the provincial annual plans must be approved by NDRC and obtain the World Bank No Objection before effectiveness.

Implementation of this activity is expected to take place in particular in the first two years of the fist phase of CRESP.

Activities included in the approved annual plan can be implemented without obtaining further approvals except the normal approvals of the different procurement steps. For each task proposed, a separate TOR needs to be prepared, consultants need to be selected and contracts need to be issued. For procurement of goods the PMO will need to follow World Bank guidelines for procurement of goods. All these tasks are the responsibility of the PMO. The PMO will, however, work closely with the provincial authorities (DRC's) in carrying out all these steps. The PMO will, however, remain ultimately responsible for initiating all activities and following the required procurement rules.

In the provincial annual plans, the pilot provinces need to provide for each task proposed the following:

Table 6.1.1. Identified Task under Provincial Renewable Energy Policy Implementation Activity.

Category	Jiangsu	Zhejiang	Fujian	Inner Mongolia
1. Renewable electricity cost and tariff studies			• Study the feasibility of MMS implementation • Analysis of the main industries (companies) that will pay for the incremental cost of wind power, including their operation status • Analysis of the main factors which influence grid connected wind power tariff • Quantitatively study on grid connected wind power tariff under different conditions (resources, scale, policy etc.); • Analysis on the incremental cost of wind power compared with conventional power	• Study the feasibility of biogas power generation
2. Development of provincial regulations or decrees, based on the Renewable Energy Law	• Implementation of the feed-in law/quota system	• Develop provincial decree for the Renewable Energy Law, including tariffs for different renewable energy technologies	• Development of provincial regulations of Renewable Energy Law and Implementation procedure • Proposal on policy measures for mitigating the burden of wind power user	• Develop provincial decree for the Renewable Energy Law implementation, including tariffs for different renewable energy technologies
3. Awareness creation on the Renewable Energy Law and provincial implementation, regulations and decrees	• Awareness Creation Among Government Officials and Others on Renewable Energy Law and its Implications		• Awareness Creation Among Government Officials and Others on Renewable Energy Law and its Implications	• Publicize the law, policy and technology application related to renewable energy, and boost the public awareness on renewable energy. This includes (a) Dissemination through media such as radio and TV; (b) Design leaflets, brochures and posters related to renewable energy; (c) Organizing meetings for the press; (d) Production and distribution of teaching and promotion materials; (e) Organizing meetings for renewable energy industries.

Category	Jiangsu	Zhejiang	Fujian	Inner Mongolia
4. Streamlining renewable energy project approval procedures	• Streamlining approval procedures		• Streamlining approval procedures	
5. Development of provincial renewable energy development strategies	• Preparation of provincial 11th FYP for Renewable Energy • Prepare biomass energy scale-up strategy • Selection of biomass technology with highest scale-up potential in Jiangsu	• Renewable energy planning, including revision of provincial 11th Five Year Plan for renewable energy • Study on Renewable Energy Development Strategy in Rural Areas in Zhejiang	• Establish Fujian wind power plan 2020 • Selection and ranking of wind power projects to be implemented before 2010 • Establish provincial phased target of wind power market share in total electricity supply	• Develop provincial 11th Five Year Plan for Renewable Energy and provincial Plan for Renewable Energy 2020 • Develop provincial Scale-up Strategy for PV Grid Connection, which may include: (a) Feasibility study on the scale-up development for PV grid connection; and (b) Study on the scale, incentive policies including financing access for the development of PV grid connection;
6. Development of provincial initiatives to support renewable energy project implementation	• Provincial Incentive policies including access to concessional financing	• Establish provincial incentive policy including concessional financing and tax incentives		• Study the incentive policies for biomass power generation
7. Renewable energy data and information collection and dissemination	• Monitor all 6 biomass projects in Jiangsu Province and draw lessons learned	• Study existing projects and assesses main problems and options to overcome these problems		
8. Developing and testing new renewable energy promotion instruments	• Rudong Green County (Renewable electricity production = electricity consumption) • Wuxi PV Rooftop City (1% of city electricity consumption from rooftop PV) • Suzhou Green Electricity (voluntary renewable electricity purchase at premium price)			• Study policy mechanism for marketing large wind farm in Inner Mongolia • Study Green Electricity trading mechanism in Inner Mongolia

information:

- Title
- Objective
- Expected Outputs (Deliverables)
- How results will be made public accessible
- Tasks
- Resources required (consultants (days and fee), reimbursables (travel and other cost), equipment cost, other cost (materials, workshops, etc.)
- Time frame
- Number and qualification of consultants required
- If possible for each position 3 candidates to select the best qualified consultant from (if the pilot provinces are not able to provide the short list, the PMO will identify qualified candidates)

Eligible Categories

Tasks in the following categories can be included in the annual plans for the Provincial Resource Assessment:

- Development of provincial cost curves
- Development of low resolution provincial resource maps (total and exploitable resources)
- Collecting high resolution specific location resource information
- Set-up provincial resource database
- Dissemination of resource data
- Training for resource assessment

The provincial cost curves are important for provincial renewable energy planning purposes.

Examples of the low resolution provincial resource maps are general resource mapping of biomass and hydro in each province (the wind resource mapping will be covered under the UNEP/NREL study).

Examples of the high resolution specific location resource information are: (i) setting up 1-2 measurement masts at each wind site for 12-month; (ii) investigating the distribution of sugar mills, rice mills, wood plants, and biomass wastes; and (iii) measuring the river flow and hydrology data at each micro-hydro site.

Resource information needs to be public information. Each activity needs to include dissemination of the resource information, However, the establishment of an overall public resource database to make available the resource data publicly available to attract investors and developers can be supported as a stand alone activity.

Base on the discussion with PMO and WB, the pilot provinces have tentatively identified tasks to be supported under this component (see Table 6.2.1). In the annual plans the pilot provinces need to specify in detail which tasks they actually want to carry out under Phase 1 of CRESP.

Eligible Expenditures

The following cost categories can be included in the provincial annual plans for “Resource Assessment”:

- Consultants (national and international)
- Travel cost
- Capacity building (workshops and training)
- Studies
- Equipment (wind measurement masts, GIS, plotters, computers)
- Software (data processing and analysis)
- Testing and Analysis
- Purchase of data

Performance Indicators

The Provincial Resource Assessment activity is considered successful if it supports the renewable energy planning efforts of the pilot provinces and when the information generated is used for investments in renewable electricity production facilities. The indicators for success are given in Table 6.2.2 below. The average cost of site specific resource information is estimated at $50,000. This includes equipment and analysis.

Table 6.2.2. Outcome Indicators and Targets Provincial Resource Assessment

Indicator	Target at 3 years after start Phase 1 of CRESP	Target at 5 years after start Phase 1 of CRESP	How the target will be assessed
Development of provincial cost curves, as reference for the agency who is responsible for planning.	In 3 pilot provinces	In 4 pilot provinces	From pilot provinces information and proof on file
Number of sites for which resource data is public	50		From PMO annual reports
Number of sites that are actually being developed	5	15	From pilot provinces and PMO annual report

Budget and Disbursements

The total budget for this activity is $4.2 million. The full amount is available to support tasks proposed by the pilot provinces and approved by the PMO.

It should be noted that only the total budget is given and not the budget by pilot province or by category. The allocation by province and category will depend on the approval of task in the annual plans prepared by the pilot provinces. It is the intention to have an equal distribution, but this is only possible if sufficient good quality proposals are received.

6.3 CGF Pilot Demonstration Projects

Objective

The objective of the Competitive Grant Facility Pilot Demonstration Projects is to support scaling-up of renewable electricity project implementation in the pilot provinces by cost-sharing support for pilot or demonstration projects in renewable energy technologies that are not yet commercial.

Mechanism

The Competitive Grant Facility approach will be used to select the pilot or demonstration projects among the 4 pilot provinces that will be supported. The grant support provided will be limited to 50% of the project cost. The proposals will be prepared by interested parties and selected on a competitive basis. For the proposal, proponents will have to use a standard format (application form) prepared by the PMO. The proposals will be evaluated and ranked. The proposals will be selected from the top down as far as the budget set by the PMO allows. For approved proposals the PMO will enter into a contract with the proponent.

Although the maximum cost share is 50%, experience with similar mechanisms shows that the average cost share is in the range of 30% to 40%. Only one tender round is foreseen. If insufficient proposals of

Table 6.2.1. Identified Task under Provincial Resource Assessment Activity.

Category	Jiangsu	Zhejiang	Fujian	Inner Mongolia
1. Development of provincial cost curves	• Development of Provincial Renewable Energy Resource Cost Curve	• Establish Provincial Renewable Energy Resource cost curves		
2. Development of low resolution provincial resource maps (total and exploitable resources)	• Economic Proven Wind Resources (wind map overlay with GIS map)			• Solar Energy Resource Assessment
3. Collecting high resolution specific location resource information	• Wind Resources Measurements • Biomass Resource Assessment	Conduct Small Hydro Resource Assessments. The resources producing electricity for at least 3000 hours per year are known. The additional resources which produce electricity between 2000 and 3000 hours per year are not known and will be identified in this study. Because cost reduction and higher tariff, these resources have become financial viable. Biomass Resource Assessment. The focus will be on identifying areas where biomass is concentrated. Wind Resource Assessment	• High-resolution Wind Energy Resource Assessments in the Complicated Topographical Areas • Wind Energy Resource Measurements and Evaluation in Large Wind Farm	• Wind Resources Assessment and Wind Farm Siting within 12 counties • Biomass Resource Assessment
4. Dissemination of resource data	• Provincial Renewable Energy Resources Database		• Provincial Wind Resources and Wind Farm Siting Database	• Provincial Renewable Energy Resources Database
5. Development of resource assessment standards, methodologies and approaches				

good quality are received the PMO might decide not to allocate the total budget. The remaining can be used for a second tender round.

Selection is among the 4 pilot provinces and not within the pilot provinces to increase competition and, therewith, improve the quality of the proposals submitted.

Eligible Proponents

Entities that are eligible for grant support from the Competitive Grant Facility Pilot Demonstration Projects are:

Existing and potential promoters (developers/investors) of renewable electricity projects with the ability to cost share the projects.

Eligible Technologies

Demonstration or piloting of the following near commercial technologies can be supported:

- Wind (on and off-shore)
- Biomass (solid and liquid, including biogas, in particular the 1 MW size county level units)
- Grid Connected PV
- Geothermal
- Ocean (tidal and wave)
- Integration of Solar Water Heaters in Buildings (reducing electricity consumption or megawatts)

Technologies that are already demonstrated in a province can not be supported. The investment projects supported by a World Bank loan are considered to demonstrate the respective technologies in the pilot provinces. The pilot or demonstration project should be near commercial in the province it is demonstrated or piloted and have a large future potential. Of particular interest are innovative technologies.

During preparation the pilot provinces already expressed interest in supporting the following demonstration or pilot projects:

Jiangsu

- Grid connected and building integrated PV
  - Integration of PV in building materials demonstration project (100 * 500 Wp)
  - Large grid connected PV array demonstration project (10 kWp)
  - PV Art Design Competition and Installation (10 * 1800 Wp)

Zhejiang

- Integrating solar water heaters into buildings
- Demonstration of offshore wind
- Demonstration of large scale biogas

Fujian

- Tidal
- Geothermal
- Offshore wind

Inner Mongolia

- Biomass power demonstration project in Xinan County, Inner Mongolia
- Biogas power demonstration project in Tuzuoqi County, Inner Mongolia
- Grid connected PV demonstration projects

The developers or promoters of these projects will be encouraged to submit proposals for cost sharing supporting these and other pilot or demonstration projects.

Activities that can be Supported

Supporting pilot or demonstration projects can include support for the actual investment, but can also include more upstream support like technical studies, development of standards or strengthening of existing renewable energy development centers. In their proposals the proponents need to make clear how the proposed project will lead to or contribute to demonstration of renewable energy technologies other than used in the investment sub-projects in their province.

The following activities can be supported:

- Labor cost of proponents staff
- Cost of consultants (national and international)
- Investments
- Travel cost related to the demonstration project
- Promotion cost

Labor cost of proponents staff

In order to simplify implementation, standard labor cost figures will be used for the labor cost of proponents staff. There are only three cost categories: a) senior, b) mid level, and c) junior. The standard cost figures for these categories are given in Table 6.3.1 below.

Table 6.3.1. Standard labor cost figures

Category	Labor cost[5] (Yuan/day)
Senior	400
Mid Level	300
Junior	200

In the proposal the proponent will need to mention the own staff used for implementing the proposed project, their involvement (number of days over a specified period). The involvement estimate must be reasonable for the work involved and the position of the staff (for instance senior staff will spend a lesser share of their time on conducting the feasibility study than less senior staff as they will have many other responsibilities). After completion of the project, the proponent will need to submit an accounting of the actual time worked on the study by each own staff member.

Other cost

All other cost will be supported based on evidence of actual expenditure.

The above implies proper record keeping by the supported proponent. The PMO will, where necessary, provide technical assistance for this and include this aspect in information and training meetings.

Size of the Projects

The minimum CGF-Pilot Demonstration Projects grant request is $100,000 (or 800,000 Yuan). Smaller proposals can not be considered because this could lead to too many small projects. This would increase the administrative workload of the PMO too much and would not be justified by the associated transaction cost.

No maximum has been established for CGF-Pilot Demonstration Project proposals. It is expected, however, that the average grant will be around $300,000 per proposal, but varying from $100,000 to $1,000,000.

[5] These figures apply for the first year and will increase each year with 10%.

Ranking Guidelines

To select the best proposals, the proposals will be ranked by a CGF-PDP Proposal Evaluation Committee and an International CGF-PDP Proposal Evaluation Expert (see below). In ranking the proposals the following aspects will be considered:
Contribution to scale-up
Increasing information on the renewable energy technology demonstrated (actual technical and financial information)
Cost effectiveness

Pilot demonstration projects contribute to scale-up when the projects increase the interest for the renewable energy technology demonstrated and when these projects can be replicated. Demonstration projects that have the potential to encourage additional investments will rank higher than projects having a lower potential.

The more actual detailed technical and financial information renewable energy projects will generate the higher the projects will be ranked. Of particular interest is information that is not known or known in insufficient detail.

Cost effectiveness looks at the ratio of envisaged investment and GEF grant requested. It further assesses if the budget for the pilot demonstration project is reasonable for the work proposed and the GEF cost share requested.

Selection Process

Only one call for proposals is envisaged. The PMO will issue this call for proposals. With the call for proposal the PMO will distribute: (i) the standard application form; (ii) instructions on how to complete the application form; and (iii) description of the Competitive Grant Facility Pilot Demonstration Projects. In the call for proposals the PMO will clearly specify the deadline for receiving the proposals. Proposals received by the PMO for whatever reason after the deadline will not be considered. Proposals need to be submitted in Chinese and in English. The call for proposals should be issued at least one month before the first deadline. Issuing the call for proposals is the responsibility of the Provincial Proposal Solicitation Expert.

After receiving the proposals, the Provincial Proposal Solicitation Expert will review the proposals and provide for each proposal detailed comments on missing information, areas that need further details or clarification and other improvements required. Proposals that are out of the scope defined by the PMO can be rejected right away. No comments need to be provided on these proposals. The comments on the proposals will be send to the proponents within one month of the first deadline. The proposals revised based on the comments made by the PMO must be submitted to the PMO within one month. In the letter with the comments the PMO will clearly specify this deadline (second deadline). Proposals received after the second deadline, for whatever reason, will not be considered further.

After the second deadline the proposals will be reviewed and ranked by a CGF-Pilot Demonstration Project Proposal Evaluation Committee. For this purpose the PMO will establish a committee comprising 5 experts with expertise in relevant fields (renewable energy technologies, financing, electric power, etc.) and a PMO representative. The committee members will be contracted by the PMO. The committee will review and rank the proposals based on the ranking guidelines and provide a written justification for the proposed ranking. Finally the committee needs to propose proposals for support from the CGF-Pilot Demonstration Projects based on the selection criteria. When reviewing the proposals, the committee also needs to provide comments on additional information, clarification, elaboration and modifications required. This can include lowering the grant requested. The lower grant will be approved under the condition that the overall project does not change. These requirements will need to be addressed by the proponent in the final revision. Organizing the evaluation process is the responsibility of the Provincial Implementation Expert.

After ranking by the CGF-PDP Evaluation Committee, the proposals will also be reviewed by an International CGF-PDP Proposal Evaluation Expert. The Expert will also rank the proposals and provide comments on the ranking made by the CGF-PDP Proposal Evaluation Committee. The expert will also provide comments on additional information, clarification, elaboration and modifications required, including lowering of the grant. To carry out this work, the Expert will be assisted by a national expert or a PMO staff member not involved in CGF-PDP proposal solicitation (for instance the Provincial Implementation Expert).

Based on the ranking prepared by the CGF-PDP Evaluation Committee and the review by the International CGF-PDP Proposal Evaluation Expert the PMO will prepare a list with proposals proposed for funding from the CFG-PDP. This list needs to be approved by NDRC. After approval by NDRC, the list, together with the ranking by the committee and the ranking of the international expert needs to be submitted to the World Bank for No Objection. The NOL request will be submitted within one month after the second deadline.

When the World Bank No Objection has been obtained, the PMO will inform the proponents on the outcome of the evaluations. The PMO can, but does not need to give an explanation for rejecting proposals. Proponents of accepted proposals will be informed that their proposals are approved, subject to changes that will be specified in the letter. The changes can include adding additional information, clarification or elaboration of certain sections or modifications. If the approved grant amount is lower than required by the proponent, the proponents needs to reflect this in the final proposal. When the grant amount is reduced the proposed activities need to remain the same. The letter will also specify a deadline by which the revised proposal needs to be submitted (third deadline). The proponent will need to submit the final proposal both in Chinese and English. The cost of translating the proposal in English will be born by the proponent and will not be considered part of the project cost.

Upon receipt of the final proposal, the PMO will check if all comments have been addressed to the satisfaction of the PMO. If not, the PMO will request an amendment of the final proposal. If yes, the PMO can prepare the CGF-PDP Grant Agreement. The final proposal will form an integral part of the grant agreement. The PMO will obtain NDRC approval and after that a World Bank No Objection for signing the grant agreement.

CGF-PDP Grant Agreement

For each project approved under the CGF-PDP a grant agreement will be signed between the PMO and the proponent. In this grant agreement, signed by both the PMO (on behalf of NDRC) and the proponent, the amount of support and the activities the proponents will need to carry out for receiving this, will be specified. The final proposal will form an integral part to this agreement. If necessary specific requirements for a particular project can be included in the grant agreement. The grant agreement will also clearly specify the reporting requirements of the proponent (see below).

Safeguards

Investment projects, constructing renewable energy facilities need to meet all relevant World Bank safeguards (Environment, Resettlement (if applicable), Safety of Dams (if applicable), and other). The PMO will assist the selected proponents in this respect. This will mainly be done between the second and third deadline.

Procurement

Proponents can procure equipment on a single source basis. This will enable proponents to procure the equipment they want to demonstrate. As the proponent covers 50% of the project cost or more, it is in the interest of the proponent to procure reasonable priced equipment of good quality. In the proposals the proponents need to indicate which equipment they intend to procure in case they do not opt for international competitive bidding. This will enable the evaluators to assess if the equipment meets minimum quality and safety requirements.

Approval Process Timing Summary

A summary of the timing of the different approval steps for approving CGF-Pilot Demonstration Projects proposals is given in Table 6.3.2.

Table 6.3.2. Summary of Timing Approval Steps CGF Pilot Demonstration Projects

Activity Completed	Months after Start
Call for Proposals Issued	Start
Deadline for submitting proposals (first deadline)	2
Comments to proponents on improvements needed	3
Deadline for revised proposals (second deadline)	4
Categorization, Ranking of proposals by National CGF-PDP Proposal Evaluation Committee, review by International CGF-PDP Proposal Evaluation Expert, decision PMO and World Bank NOL	5
Letter informing proponent that proposal is approved subject to making additional revision (if needed)	5.5
Deadline for submitting final proposal	6
NOL CGF-PDP Grant Agreement and final proposal	7
Contracts issued	7.5

Grant Payments

Because the projects can be large, the grant payment is not standardized, and will be different for each project. The grant payment schedule, based on milestones reached will be specified in the contract between the PMO and the proponent.

Reporting Requirement Proponent to PMO

The proponent will need to prepare one or more progress reports. The schedule for submitting these reports will be included in the contract between the proponent and the PMO. The format of the progress report will be developed by the PMO and provided to the proponent once the project is operational. The intention of the progress report is to enable the PMO to monitor progress of the projects supported under the CFG-PDP. The progress reports must be approved by the PMO. The PMO will request the proponent the make revisions until the report is acceptable to the PMO.

The most important report is the final report, which will consist of a technical and a financial report. The technical report will need to report on the work carried out, outputs and outcome of the projects. The financial reporting needs to provide evidence on the total project cost and evidence that the expenditure was in line with that proposed in the proposal. For this purpose receipts, invoices and other proof needs to be submitted on expenditure for the project. If needed, the PMO can require a more detailed investigation of the accounting for the project.

Closing of CGF-PDP Projects

The Provincial Implementation Expert will review the final report. If the Provincial Implementation Expert is satisfied, he/she can call a project completion meeting. The purpose of this meeting is to review the results of CGF-PDP projects to assess if all requirements have been met, to approve closing of the project, and release of the final payment. In such meeting a number of projects proposed for closing will be discussed. The project completion meeting will need to be attended by the Executive Director or Deputy Executive Director, the financial manager and the Provincial Implementation Manager. When the meeting agrees that the project can be closed and final payment made, a decision note will be prepared for the file, signed by all participants. This note will be added to the project file. After the note is signed, the final payment can be made and the project can be closed. If the meeting does not agree to close the

project, the meeting will formulate requirements that need to be met before the project can be closed. The Provincial Implementation Expert will continue to work with the proponent until all requirements have been met.

Dissemination of the Results

The PMO will be responsible for dissemination of the results. The proponents will agree in the contract with the PMO to cooperate in dissemination of the results. This includes participating in result dissemination meetings and providing access to visitors.

Project File

The PMO will keep one file for each approved CGF-PDP project. This file should contain the following:
Original Proposal
Letter with modification requirements to original proposal
Revised Proposal
Letter informing the proponent that the proposal has been approved subject to modifications specified in the letter
Final Proposal in Chinese
Final Proposal in English
Contract between PMO and proponent
Payments
Progress Reports
Final Report (technical and financial report)
Completion note (signed by PMO staff who participated in the meeting)
Relevant correspondence with proponent
Notes of relevant telephone or other conversations with proponent on the project

These files will be reviewed by the World Bank supervision mission.

Performance Indicators

The CGF-PDP is considered successful if valuable actual technical and financial information is generated, if awareness on demonstrated renewable energy technologies has increased and when the projects lead to additional investments in these technologies. To measure success, a number of indicators have been developed and targets for these indicators have been established. The indicators and targets are given in the Tables below. Table 6.3.3 contains outcome indicators and targets while Table 6.3.4 contains project implementation indicators.

Table 6.3.3. Outcome Indicators and Targets CGF-Pilot Demonstration Projects

Indicator	Target at 3 years after start Phase 1 of CRESP	Target at 5 years after start Phase 1 of CRESP	How the target will be assessed
Detailed project information publicly available	4 projects	10 projects	CRESP annual reports
Awareness created (people aware of demonstrated projects)	4,000	40,000	Survey
Replication (investment in similar projects)	$2,000,000	$5,000,000	Provincial Government Information

Table 6.3.4. Project Implementation Indicators and Targets CGF-Pilot Demonstration Projects

Indicator	Total
CGF-Pilot Demonstration Projects Received	20
CGF-Pilot Demonstration Projects Approved	10
Approval Ratio	50%
Total Budget Approved Projects	$7,500,000
Total Grant Approved	$3,000,000
Average Grant Support Ratio	40%

Budget and Disbursements

The total CGF-Pilot Demonstration Projects budget is $3 million. Part of this budget will be used for the solicitation, evaluation and selection process. Details are provided in Table 6.3.5. This budget assumes 1 tender round. The balance ($2,883,000) is available to cost share competitive selected pilot demonstration projects. The proposed budgets for the CGF-Pilot Demonstration Projects are given in Tables 6.3.6 to 6.3.8. The estimated GEF disbursements are given in Table 6.3.9. As Phase 1 of CRESP is expected to start in the middle of 2005, the first tender is expected to be issued in 2006.

Table 6.3.5 Estimated Budget for Solicitation, Evaluation and Selection Process ($)

Item	Days	Fee	Reimbursable	Total
CGF-Pilot Demonstration Projects Proposal Evaluation Committee	5*10	$200/day	$1,000	$11,000
CGF-PDP International Proposal Evaluation Expert	20 days	$800/day	$6,000	$22,000
Support for finalizing proposals, including safeguard issues and procurement	400 days national experts	$200/day	$4,000	$84,000
Total				$117,000

6.4 Provincial Capacity Building and Studies

Objective

The objective of the Provincial Capacity Building and Studies is to build capacity at all levels through conducting workshops and training on specific topics to support the implementation of the pilot provinces program.

Mechanism

Activities under the Provincial Capacity Building and Studies element are proposed by the provincial DRC and included in the provincial annual plans prepared by the provinces. The annual plans are discussed and agreed with the PMO. The PMO in turn will include the agreed activities in the annual plan the PMO needs to prepare. As the annual plan requires approval from NDRC and World Bank No Objection, activities in the approved annual plan can be carried out without requiring prior approval, other than the normal procurement approvals or World Bank No Objections. Activities the provincial DRC's intends to carry out that are not in the annual plan require separate approval by NDRC and World Bank No Objection.

For approved activities the PMO will follow the established procurement procedures. The first step is always the preparation of a TOR and estimating the budget.

Activities that can be supported

The specific activities that will be supported under this element can not be specified in detail at this stage. The support required will become apparent during project implementation. It is expected that this will be less in the first year, but increase in the second and third year of Phase 1 of CRESP. The kind of activities that can be supported is however, clearly defined.

The following activities can be supported under this element:

1. Workshops
    - Organization of workshops
    - Renting workshop facilities
    - Production of workshop materials
    - Conducting workshops
    - Participation (with or without cost share)
    - Hospitality during workshops
    - Preparation of workshop reports
    - Dissemination of outcome
    - Support participation of workshops organized by others (with or without cost share)
2. Training
    - Preparation of training material and training courses
    - Conducting training
    - Rent training room and facilities
    - Provision of training materials
    - Participation (with or without cost share)
    - Conducting information and awareness campaigns
    - Study tours
    - Organizing training abroad of individuals and of groups
    - Support participation of training organized by others (with or without cost share)
3. Meetings
    - Organize exhibitions or trade fairs
    - Support participation (with or without cost share)
    - Support participation in exhibitions and trade fairs organized by others
4. Studies
    - Conducting studies
    - Dissemination of results through reporting (editing and printing)
    - Dissemination of results through workshops, training and meetings

Identified Capacity Building and Studies Needs

The capacity building and training needs identified include:

For Developers:

- Training on conducting pre-feasibility studies and feasibility studies
- Training on preparation of business plans
- Training on procurement
- Financial engineering

For Financing Institutions:

- Renewable energy project appraisal
- Streamlining appraisal and approval procedures
- Risk mitigation
- Standards and certification

For the General Public

- Benefits of renewable energy
- Sustainable development

Studies

- Urgent fact finding on renewable energy technologies
- Renewable energy management studies

Performance Indicators

The Provincial Capacity Building and Studies element is considered successful if it contributes to the increasing knowledge and experience. The indicators to measure success are given in Table 6.4.1.

Table 6.4.1. Outcome Indicators and Targets Provincial Capacity Building and Training

Indicator	Target at 3 years after start Phase 1 of CRESP	Target at 5 years after start Phase 1 of CRESP	How the target will be assessed
Number of workshops conducted	24	-	CRESP annual and end Phase 1 reports
Number of people participated	500	-	CRESP annual and end Phase 1 reports
Number of training courses conducted	24		CRESP annual and end Phase 1 reports
Number of people trained	400		CRESP annual and end Phase 1 reports
Number of meetings supported	24	-	CRESP annual and end Phase 1 reports
Number of participants of which participation was supported	100	-	CRESP annual and end Phase 1 reports
Number of Studies	8	-	CRESP annual and end Phase 1 reports
Number of Reports/Publications generated by Studies	8	-	CRESP annual and end Phase 1 reports

Budget and Disbursement Estimates

The total budget for the Provincial Capacity Building and Studies is $1.0 million.

7 Capacity Building Investors and Scale-up Support

Objective

The objectives of the Capacity Building Investors and Scale-up Support sub-component are:
- Strengthen the provincial investment projects supported by World Bank loans; and
- Building a strong pipeline of bankable renewable electricity investment projects.

The Strengthening of provincial investment projects supported by World Bank loans takes place by providing technical assistance and conducting specific studies to support the projects or address specific problems that arise during implementation.

Building a strong pipeline of bankable projects takes place by capacity building of investors, providing access to international experience and best practices, by supporting high quality feasibility studies and conducting resource assessments at potential investment sites.

Investors will cost share all activities supported under this component.

Through this component, the investors active in the pilot provinces are encouraged to invest in additional projects and, therewith, achieve scaling-up of their renewable electricity activities.

Mechanism

Investors will prepare annual plans for the activities they intend to carry out during the coming calendar year. These plans are submitted to the PMO for review and approval and for inclusion in the PMO annual plan. For Fujian, Jiangsu and Inner Mongolia the investors are the project companies. In Zhejiang the investors of the small hydro and small hydro rehabilitation projects are represented by the Zhejiang Provincial Hydropower Development Management Center (ZPHDMC).

It should be noted that the use of the GEF grant by the investors will be included in the project agreements between the investors and the World Bank. In these projects agreements the criteria for eligible expenditures and the cost sharing requirement will be specified.

It is expected that the Strengthening Provincial Investment Projects Supported by World Bank Loan for Jiangsu, Fujian and Inner Mongolia, includes activities directly related to the 3 investment projects. In Zhejiang, 18 investment projects will be supported. The Strengthening Provincial Investment Projects Supported by World Bank Loan will in particular be used for conducting the Due Diligence of these investment projects according to the established framework and for capacity building of the developers of the 46 projects.

Eligible Activities

The eligible activities to:
- Strengthen the provincial investment projects supported by World Bank loans; and
- Build a strong pipeline of bankable renewable electricity investment projects, are:

    - Capacity building of investors and staff
    - Technical assistance
    - Access to international experience and best practices
    - Studies to support the investment projects
    - Feasibility studies for additional renewable electricity investment projects (other than those supported by World Bank loan)
    - Resource studies and resource assessment at investment sites
    - Purchase of resource data
    - Formulation of bankable proposals
    - Other activities eligible for GEF financing which will help to build a strong pipeline of bankable renewable electricity projects
    - Utilization of by products
    - Packaging of projects and due diligence
    - Mitigation negative impacts
    - Strengthening of positive impacts
    - Scale-up studies/Study on additional investment projects
    - Impact studies
    - Trouble shooting during implementation

Eligible Cost Categories

The eligible cost categories to:
- Strengthen the provincial investment projects supported by World Bank loans; and
- Build a strong pipeline of bankable renewable electricity investment projects, are:

    - National and international consultants
    - Travel cost
    - Study tours

- Formal training (lecturers, workshops)
- Participation in seminars, conferences, workshops
- Equipment (for resource assessment and studies)
- Purchase of data and information
- Testing and analysis

GEF Grant Utilization Plan for Four Investment Projects

The allocation of the GEF Grant to the four "investors" is given in Table 7.1.

Table 7.1 GEF Grant Allocation Capacity Building Investors and Scale-up Support

Investor	**Allocated GEF Grant**
Jiangsu Guoxin Renewable Energy Development Company	$1.0 million
Zhejiang Provincial Hydropower Development Management Center	$1.2 million
Longyuan	$ 1.5 million
Inner Mongolia North Longyuan Wind Power Company	$1.5 million

The allocation for the Zhejiang Provincial Hydropower Development Management Center and the Inner Mongolia North Longyuan Wind Power Company will be made as soon as these projects are submitted to the World Bank Board of Directors for approval.

The four investors have prepared grant utilization plans to support the investment project implementation and capacity building for scale-up development. The envisaged activities proposed by four investors are given in Table 7.2 to Table 7.5.

Table 7.2 GEF grant utilization plan for Jiangsu Guoxin Renewable Energy Development Company

No.	Content	Budget （USD）	Timing
1	Support for implementation of straw fueled power plant supported by World Bank loan	370,000	
1.1	Analysis of Components and Characteristics of Straw and Development of Technology for the use of Fly Ash (1) determination of straw components by qualified foreign and local institutions; procurement of analytical instruments for straw; training of technical staff for operation; (2) determination of fly ash components; development of technology for the re-use of fly ash to produce organic fertilizer .	50,000	Finished within one and a half year after effectiveness of the Loan Agreement
1.2	Investigation of the Conceptual Design for Plant Building and on Selection for Straw-fueled Boiler Island and Straw Pre-process ＆ Transport System (1) investigate foreign straw power plants and manufacturers of straw-fueled boiler islands and straw pre-process ＆ transport systems; investigate the design institution and the consulting firm on conceptual design for plant building, equipment selection and development of technical specifications. (2) investigate the operation of overseas straw-fueled boiler islands and straw pre-process ＆ transport systems; discuss with the procurement agency, the design institution and the consulting firm on the procurement of straw-fueled boiler island and straw pre-process ＆ transport system. (3) investigate foreign power plants and relevant institutions.	100,000	Finished within one and a half year after effectiveness of the Loan Agreement
1.3	Consulting Services for Bidding Process and Contract Negotiation for the Procurement of Straw-Fueled Boiler Island and Straw Pre-process ＆Transport System We will select a foreign consulting firm to provide support for procuring the boiler island and the straw pre-process ＆ transport system on the basis of International Competitive Bidding(ICB). The consulting services include assistance in the preparation and reviewing of the bidding document, and in technical bid evaluation and contract negotiation.	100,000	Finished within one and a half year after effectiveness of the Loan Agreement
1.4	Supervision for Manufacturing Straw-Fueled Boiler Island and Pre-process ＆ Transport System, Acceptance of Such Equipment; Consulting Services for Installation and Commissioning (1)Select foreign or local experts to supervise the manufacturing of straw-fueled boiler island and straw pre-process ＆ transport system and perform	100,000	Finished within one and a half year after effectiveness of the Loan Agreement

	acceptance test of such equipment; (2)Select a foreign consultant to provide consulting services for the installation and commissioning of key equipment including straw-fueled boiler island and straw pre-process ＆ transport system.		
1.5	Legal Consulting Services for Bidding Process of Straw-Fueled Boiler Island and Pre-process ＆ Transport System and for Communications with the World Bank Select a lawyer who has experiences of procurement through ICB and is capable of using English as a working language to provide services including drafting and verification of documents concerning bidding process, contract negotiation, import process and communications with the World Bank for straw-fueled boiler island and straw pre-process ＆ transport system.	20,000	Finished within one and a half year after effectiveness of the Loan Agreement
2	Support for the Capacity Building of the Project Company	200,000	
2.1	Training of Staff of Project Management, Operation and Plant Management (1) attend training courses including finance, procurement and project management sponsored by the World Bank and other institutions; (2) send the operational and management staff to overseas power plants and local institutions for training on production arrangements and operational management.	130,000	Finished within one and a half year after effectiveness of the Loan Agreement
2.2	Development of a Network and Training of Management Staff and Brokers for Straw Collection In order to ensure the supply of fuels for power plant, we will develop a straw collection network through constructing collection stations, developing a management system, selecting and training of brokers and management staff.	70,000	Finished within one and a half year after effectiveness of the Loan Agreement
3	Support the Project Company to Rapidly Accelerate for the Scale-up of Renewable Energy Project	280,000	
3.1	Development for the Localization of Production Technology and Equipment We will conduct technology development based on the import, assimilation and absorption of production technology and equipment for straw-fueled boiler island, straw baler and band for straw baling to reduce the cost of straw power plant and promote the localization of such technology and equipment.	200,000	Finished within 2 years after effectiveness of the Loan Agreement
3.2	Development of a Kind of Plant with Higher Combustion Value to be Planted on Beaches A kind of plant which has higher combustion value and can adapt to the environment of beaches will be cultivated to be planted on beaches on both sides of dike through cooperation with research institutes.	80,000	Finished within 2 years after effectiveness of the Loan Agreement

4	Support the project company to develop additional renewable energy projects at other locations in Jiangsu province	150,000	
4.1	Preparatory work for New Projects of Renewable Energy We will carry out preparatory work such as resource survey, site selection and conduct the feasibility study for new renewable energy projects in pilot province and other regions to accelerate the scale-up of renewable energy projects.	150,000	Finished within 2 years after effectiveness of the Loan Agreement
Total		1,000,000	

Table 7.3 GEF grant utilization plan for Zhejiang Hydropower Development Management Center

	Content	Budget (U.S. dollar)	Timing
1	Project Management and Support	500,000	
1.1	**Subprojects due diligence.** Organizing domestic experts, including finance, EIA, RAP, procurement and engineering technology etc. to complete due diligence for all the subprojects and submit due diligence reports.	150,000	To be completed within 1.5 years from effectiveness
1.2	**Project management.** Regular check during project implementation period. Assisting project owners to improve their project management capability and hydropower development technology; providing consulting service and submitting regularly project implementation report etc.	200,000	To be completed within 3 years from effectiveness
1.3	**Project exterior supervision.** EIA and RAP exterior supervision will be completed by inviting qualified supervision institution.	150,000	
2	Supporting rapid development of subproject companies	200,000	
2.1	**Subject study.** Study on hydropower enterprise group development options and support requirements. Study on hydropower industry management system.	100,000	To be completed within 2 years from effectiveness
2.2	**Supporting project companies development.** Assisting project companies to improve it strategic management and financial management level so as to upgrade investment capability in renewable energy development.	100,000	To be completed within 3 years from effectiveness
3	Supporting project companies capability construction and technical improvement	250,000	
3.1	**Training.** Training on implementation of investment projects, mainly including finance, EIA, RAP, procurement and engineering technology. Capability training for project companies, including business management and safety operation for hydropower station.	150,000	To be completed within 2 years from effectiveness

	Content	Budget (U.S. dollar)	Timing
3.2	**International communications.** Conducting international communications on comprehensive utilization of hydro-energy resource, development technology of small hydropower and small hydropower development mode abroad.	100,000	To be completed within 3 years from effectiveness
4	Supporting development of new projects	250,000	
4.1	Assisting project companies to complete pre-stage work of new projects, recruiting professional consulting institution to offer consultative service, providing solution for important problems and technical and financial support.	250,000	To be completed within 3 years from effectiveness
Total		1,200,000	

Table 7.4 GEF grant utilization plan for Longyuan

	Content	Budget (U.S. dollar)	Timing
1	Preparation of a development plan and conducting strategic research	200,000	
1.1	Conduct market analysis (policy environment, market, company resources, opportunities and threats). Develop enterprise's wind development plan (short and long term). Work out strategies to implement the wind development plan (financial, management, human resources, marketing).		To be completed within 2 years from effectiveness
2	International consulting services	100,000	
2.1	To support preparation of bidding documents and bid evaluation.		To be completed within 2 years from effectiveness
3	Development of procedures and guidelines for operation of the wind power plant.	100,000	
3.1	Develop procedures and guidelines, including: operation, maintenance, protection against icing, protection against thunderstorm, fire protection, metering, equipment management, safety, noise reduction, project management for wind farm construction, etc.		To be completed within 2 years from effectiveness
4	Capacity building and access to best international and Chinese practice	410,000	
4.1	Financial management capability building: including hardware and software procurement and training		To be completed within 2 years from effectiveness
4.2	Wind resources analysis capability building, including hardware and software procurement and training		
4.3	Operating capability building, including establish of remote control system, monitoring system and maintenance equipment and instrument.		
4.4	Construction project management capability building: including project management software development and training		To be completed within 3 years from effectiveness

	Content	Budget (U.S. dollar)	Timing
5	Investigate international developments and technical training	300,000	
5.1	Twining		To be completed within 3 years from effectiveness
5.2	Training courses in the areas of planning, project development, survey, design, feasibility study, resources analysis, operation and maintenance, project supervision, grid connection and financing, etc.		
6	Investigate at home	30,000	
6.1	Study tours and investigations on wind farm construction, equipment manufacturing, and policies etc.		To be completed within 2 years from effectiveness
7	Development of future project portfolio	360,000	
7.1	Measurement and analysis of wind resources, including procurement of hardware and software and O&M costs.		To be completed within 2 years from effectiveness
7.2	Offshore wind resources measurement and analysis.		To be completed within 3 years from effectiveness
7.3	site selection		To be completed within 2 years from effectiveness
7.4	feasibility study		To be completed within 3 years from effectiveness
Total		1,500,000	

Table 7.5 GEF grant utilization plan for Inner Mongolia North Longyuan Wind Power Company

	Content	Budget (U.S. dollar)	Timing
1	Development Program and Strategy Research		
1.1	Draw up development strategy and long-term development program for the enterprise by studying and analyzing professional situation, market environment, company resources and comprehensive capacity. Based on the enterprise general development strategy, draw up policies for organization, finance, management, labor and market to accelerate stabilize and endure the development of enterprise.	100,000.00	Starting from the effectiveness of the World Bank loan and the activity is expected to last for one year.
2	Capacity building of investment company	320,000	
2.1	Finance capacity building of wind power company including software and hardware system distribution and training for finance management automation.		Starting from effectiveness the activity is expected to be completed within one year.
2.2	Operation capacity building of wind farm including long-distance monitoring, condition test, equipment examination and reparation, instruments and tools.		

	Content	Budget (U.S. dollar)	Timing
2.3	Civil work capacity building including soft and hardware system distribution and training for civil work management.		
3	Wind Resource Evaluation and Wind Site Selection	200,000	
3.1	Strengthen the analysis capacity of wind resources and wind site selection.		Starting from effectiveness the activity is expected to be completed within one year.
3.2	Distribute the software and hardware system of wind resources analysis and wind farm selection, including relevant training for soft and hard system.		
4	Wind Measuring Activities for four Pre-selected Wind Farms	270,000	
4.1	Distribute wind-measurement hardware instruments for the four new wind farm		Starting from effectiveness the activity are expected to be completed within two years.
4.2	Analyze data collected from the four pre-selected wind farms		
5	Feasibility Studies for Wind Farms		
5.1	The Feasibility Study of Inner Mongolia Da Mao Qi Mountain Bao 100 MW Wind Farm Project. (site selection of wind farm and feasibility study)	190,000	Starting from the effectiveness of the World Bank loan and the activity is expected to last for one year.
5.2	The Feasibility Study of Inner Mongolia Xi Meng 100 MW Wind Farm Project (site selection of wind farm and feasibility study)	190,000	Starting from the effectiveness of the World Bank loan and the activity is expected to last for one year.
6	Overseas Study and Training	200,000	
6.1	Communicate and discuss with counterpart companies		Starting from the effectiveness of the World Bank loan and the activity is expected to last for three years.
6.2	Collect relevant information		
6.3	Project units staff training covering program, policy, exploration, feasibility study, resource analysis, operation maintenance, performance test and reparation, grid-connection and funding.		
7	Domestic Study	30,000	
7.1	Pursuit at study and research about wind farm construction, instruments manufacture, operation, test and reparation.		Starting from the effectiveness of the World Bank loan and the activity is expected to last for one year.
7.2	Investigate and research the investigations and policies of relevant scientific and research institute		
Total		1,500,000	

Performance Indicators

The Capacity Building Investors and Scale-up Support sub-component is considered successful if it contributes in a significant manner to successfully implement the provincial investment projects and when it builds a strong pipeline of bankable renewable electricity investment projects. The indicators for success are given in Table 7.6 below.

Table 7.6 Outcome Indicators and Targets Strengthening Provincial Investment Projects

Indicator	Target at 3 years after start Phase 1 of CRESP	Target at 5 years after start Phase 1 of CRESP	How the target will be assessed
Investment projects implemented	All 4	All 4	From developers and project monitoring information
Pipeline of additional investment projects developed	Pipeline of additional 400 MW of projects developed	Pipeline expanded to 800 MW	From developers

Budget and Disbursements

The total budget for this sub-component is $5.2 million. The full amount is available to support tasks proposed by the developers (and ZPHDMC in the case of Zhejiang).

8 Program Management

The Program Management Sub-component consists of the following activities:

- PMO Operation
- PMO Activities (GOC Partnership, Preparation CRESP Phase II, and Outreach and Monitoring)
- PMO Consultant Pool

These Program Management Activities are discussed in detail in the following sections.

8.1 PMO Operation

On the behalf of NDRC, the PMO (Project Management Office) is in charge of managing the Institutional Development and Capacity Building Component of the first Phase of CRESP.

The PMO will have in total 16 full time staff members, including the Field Managers, one in each Pilot Province. Details are provided below.

8.1.1 PMO Full Time Staff

There are in total 16 full-time staff in the PMO. The positions are as follows:

1. Executive Director (ED)
2. Deputy Executive Director (DED)
3. National Chief Technical Advisor (NCTA)
4. Office Secretary/Outreach/Promotion Manager (OS)
5. Financial Manager/Contract Manager/Accountant (FCM)

6. Cashier/Bookkeeper (BK)
7. National Implementation Manager (NIM)
8. National Implementation Manager Assistant for Wind TI(NIM-AW)
9. National Implementation Manager Assistant for Biomass TI and RE Law (NIM-AB)
10. National Proposal Solicitation Expert (NPSE)
11. Provincial Implementation Manager (PIM)
12. Investment Project Coordinator/Provincial Proposal Solicitation Expert (IPC-PPSE)
13. Inner Mongolia Field Manager (IMFM)
14. Fujian Field Manager (FFM)
15. Zhejiang Field Manager (ZFM)
16. Jiangsu Field Manager (JFM)

For each position, the main tasks are listed below. A distinction is made between general tasks and specific tasks. Specific tasks refer to the activities in elements described in Chapters 5, 6 and 7 and to additional tasks carried out by the PMO such as: (a) the GOC Partnership for Renewable Energy Development; (b) Preparation of Phase II of CRESP; (c) Outreach and Promotion.

Executive Director (ED)

General Tasks and Responsibilities:

- Overall responsibility for management and implementation of CRESP;
- Responsible for communication with steering committee, program director and coordinator of NDRC, and the World Bank Team leader;
- Responsible for reporting to NDRC and World Bank;
- Responsible for the implementation of the project to be carried out in accordance with plans and according to established rules and regulations;
- Enable staff in the PMO to carry out their assigned tasks.

Specific Tasks:

- Responsible for formal communication with the World Bank and NDRC (annual plans, progress reports, requests for clearance/No Objection, etc.);
- Sign all contracts;
- Formal communication with proponents, contractors, etc. (request for proposals, announcing tenders, etc.);
- Responsible for communication to the outside (outreach and awareness creation)
- Prepare and participate in quarterly progress meetings and Steering Committee meetings;
- Approving PMO expenditure (signing off);
- Requesting payment from Special Account;
- Publicize program financial reports;
- Implementation of GOC Partnership for Renewable Energy Development;
- Preparation of Phase II of CRESP;

Deputy Executive Director (DED)

General Tasks and Responsibilities:

- Assist PMO Executive Director to implement the project;
- Daily communication with National CTA (NCTA) and International CTA (ICTA) and PMO sections
- Daily communication with stakeholders of project;
- Prepare the required documentation and reports for ED reviewing and issuing;
- Responsible for managing the different PMO sections;
- Responsible for maintaining of Consultant Pool with assisting of section leaders.

Specific task:

- Complete the Annual Plan of CRESP Project with assisting of PMO functional section leaders, and send to ED for reviewing and submitting to the NDRC and the World Bank;
- Responsible for preparing the annual plan by the different section leaders;
- Complete the periodic progress report of CRESP Project with assisting of PMO section leaders, and send to ED for reviewing and submitting to NDRC and the World Bank;
- Responsible for implementing the Further Development of the RE Law and RE Law Implementation;
- Participate the proposals evaluation committee for responsible sections;
- Prepare requests to the World Bank for issuing "No Objection" for clearance and submission by ED;
- Review and clear the contracts to be issued and submit these for signing by ED;
- Other communications and assignments required by ED.

National Chief Technical Advisor (NCTA)

General tasks and Responsibilities:
- Advise and assist the DED and ED in implementing CRESP;
- Provide access to professional knowledge and experience.

Specific task:
- Assist DED in preparing annual plans, progress reports and other reports as needed;
- Responsible for finalizing all reporting in Chinese;
- Identify national experts for specific tasks and for the consultant pool roster;
- Assist PMO staff and provide guidance in implementing the different activities and elements under CRESP;
- Assist PMO staff in preparing TOR's as needed;
- Participate in the evaluation of proposals and bids;
- Assist in establishing required contacts.

Office Secretary (OS)

General Tasks and Responsibilities
- Assist the ED, DED and NCTA, ICTA
- Preparation of CRESP outreach and promotion materials (reports, leaflets, brochures, newspaper articles, etc.)

Specific Tasks
- Support the implementation of the GOC Partnership
- Support the preparation of Phase II of CRESP
- Support the outreach and awareness creation efforts
- Translation of important documents
- Draft communications for ED and DED
- Assist ED, DED, NCTA and ICTA as needed

Collect information from other PMO staff for outreach and promotion
- Prepare reports, leaflets, brochures, newspaper articles on CRESP activities both in Chinese and English.

Financial Manager/Contract Manager/Accountant (FCM)

General tasks and Responsibilities:
- Section leader of the financial and administration section;
- Responsible for financial and contract management system of PMO;
- Responsible for administration management of PMO
- Management of all contracts issued by the PMO, including staff contracts;

- Responsible that PMO follows World Bank contracting procedures;
- Set-up and maintain a good contracts tracking system;
- Responsible for developing and maintaining Management Information System (MIS).

Specific task:
- Maintain the Financial Management System;
- Establish internal controls and procedures;
- Maintain the project accounts;
- Draft the periodic project financial reports for ED and DED review;
- Set-up and maintain a staff time reporting system
- Set up the contract management and filing system with help of bookkeeper/cashier
- Responsible for setting up the MIS for contract and financial management
- Involve in the negotiation with contractors
- Contract consultants and firms
- Deal with payments authorization
- Track contracts status by means of a MIS
- Participate in contract closing meetings
- Prepare of statistical input to quarterly and annual reports
- MIS operation

Cashier/Bookkeeper (BK)

General Tasks and Responsibilities:
- Responsible for proper bookkeeping;
- Maintain and update CRESP Internet Site (prepare materials for the CRESP internet site)
- Cashier;
- Assist the FM.

Specific Tasks：
- Maintain good accounts and prepare summary reports;
- Assist in solicitation and implementation work where required and possible;

Prepare exhibition materials on CRESP and organize professional designer for exhibition stands;

Communicate with CRESP Internet Site Maintenance Contractor on replacing outdated materials, updating materials and adding new materials;
- Organize meetings for the press.

National Implementation Manager/National Implementation Manager Assistant for Wind TI/National Implementation Manager Assistant for Biomass TI and RE Law (NIM/NIM-A/NIM-AB)

General task:
- Section leader of National Institutional Development and Capacity Building sub-component;
- Responsible for National Institutional Development and Capacity Building sub-component planning and implementation;

Specific Tasks:
- Prepare and develop the section annual plan, with input from other staff in the section;
- Prepare and develop the periodic progress report of the section with input of National Proposal Solicitation Expert and other staff in the section;
- Develop TORs for specific assignments (with assistance of CTA if necessary);
- Responsible for selecting consultants and preparing contracts;
- Daily communication with contractors and proponents at national level IDCB;
- Obtain progress and other reports from contractors and proponents at national level IDCB;
- Provide comments on deliverables from contractors and proponents at national level IDCB;
- Monitoring the implementation progress of contracts with assisting of contract manager;

- Other works required by ED, DED, NCTA and ICTA.

National Proposal Solicitation Expert (NPSE)

General Task and Responsibilities:

- Responsible for obtaining good quality proposals for National Institutional Development and Capacity Building sub-component;

Specific Tasks:

- Provide inputs for the preparation of annual plans, progress reports and other related to the National IDCB;
- Develop the TORs for specific assignments with assisting of NCTA and ICTA if necessary;
- Responsible for preparing calls for proposals and procurement bids;
- Responsible for selecting proponents and contractors and obtaining the required clearances and approvals;
- Other works required by ED, DED, NCTA and ICTA.

Provincial Implementation Manager (PIM)

General task:

- Section leader of Provincial IDCB sub-component;
- Responsible for Provincial IDCB sub-component;

Specific task:

- Prepare the section annual plans, progress reports and other reports, with input of the ICM;
- Develop TORs for specific assignments (with assisting of NCTA and ICTA if necessary);
- Responsible for selecting consultants and preparing contracts;
- Daily communication with contractors and proponents at provincial level IDCB;
- Obtain progress and other reports from contractors and proponents at provincial level IDCB;
- Provide comments on deliverables from contractors and proponents at provincial level IDCB;
- Monitoring the implementation progress of contracts with assisting of contract manager;
- Other works required by ED, DED, NCTA and ICTA.

Investment Projects Coordinator/Provincial Proposal Solicitation Expert (IPC-PPSE)

General Tasks and Responsibilities:

- Responsible for assisting the investment projects;
- Responsible for implementing the Strengthening Provincial Investment Projects activity;
- Responsible for preparing the annual plan sections related to the investment projects and the support for the investment projects;
- Responsible for Proposals collection for Provincial TA plan and implementation;
- Coordination with ED, DED, NCTA, ICTA and other sections of PMO;

Specific Tasks:

- Assist in preparing the section annual plans, progress reports and other reports;
- Obtain from the developers and PDRC proposals for supporting the investment projects;
- Review these proposals, provide comments and approve the proposals once acceptable;
- Include the proposals in the annual plans and make revisions based on comments from NDRC or the World Bank if required;
- Implement the annual plans as agreed;
- Report on the progress of implementation
- Develop the TORs for specific assignments with assisting of NCTA and ICTA if necessary;
- Monitoring the implementation progress of contracts with assisting of contract manager;
- Other works required by ED, DED, NCTA and ICTA.

Provincial field managers (Provincial FM)

General Tasks and Responsibilities:

- Coordination between the PMO and the Province;
- Assist in the implementation of the Provincial Institutional Development and Capacity Building Sub-Component in their province;

Specific Tasks:

- Communication with the provincial DRC's;
- Obtain provincial approvals;
- Organize provincial meetings;
- Communicate with IPC-PPSE, PIM and DED.

Recruitment Procedures

PMO staff is recruited following normal procurement procedures.

For each position a detailed TOR will be prepared, indication the required qualifications for that position. For each position at least 3 qualified candidates need to be identified. From at least 3 qualified candidates the most qualified candidate will be selected. The PMO staff procurement package, including: (i) TOR; (ii) cost estimate; (iii) CV's of at least 3 qualified candidates; (iv) justification of selecting the most qualified candidate; (v) draft contract with proposed fee, needs to be submitted to the World Bank for No Objection after obtaining NDRC approval.

8.1.2 PMO Budget

The PMO Budget includes the following budget lines:

- PMO Staff salary
- PMO Office
- PMO Staff Travel
- PMO Staff Training
- Operating Expenses

PMO Staff Salary

The PMO is staffed with 16 full time staff members, including the 4 Field Managers. Full time staff members are contracted by CRESP and are not allowed to be employed by any other institution. To keep track of attendance, the Office Secretary will keep PMO staff attendance or time sheets.

PMO Office

The PMO Office budget line is for all cost related to the PMO Office, including:

- Renting office space and utilities. It estimated that the PMO needs 400 m^2 office space for twelve full time staff (including the CTA, but excluding the Field Managers), visitors and meeting space. According to the existing office rental situation in Beijing, the unit rental fee (including service fee and utilities) will be \$0.57 /m^2 .day.
- Office furniture. The office will be furnished with desk, chair, cabinet for each staff and visitors, meeting room furniture and necessary additional furniture. This furniture will be purchased. The procurement will follow the World Bank procurement guidelines.
- Office equipment. It includes 12 desk top computer for PMO staff who are not expected to travel frequently, 2 desk top computers for visitors, 10 laptops for senior PMO staff, 1 copy machine, 25 telephone sets, 1 fax machine, 1 scanners, 1 LCD projectors, 1 digital camera, white board, coat hangers, water machines, coffee makers, etc. The procurement will follow the World Bank

procurement guideline. All equipment will be managed by the bookkeeper. All equipment purchased will be labeled and registered. The equipment will remain the property of the project.

- Office supplies. This includes stationery needed by PMO.
- Office communication. This covers the expenses of telephone. fax, high speed internet, mailing, courier, etc.

PMO Staff Travel

The PMO travel budget covers all PMO staff travel (including the ICTA). It includes transportation, hotel, accommodation, food, and contingencies. It is estimated that each staff member will travel four times per year.

All PMO travel needs to be approved by the ED before commencing the travel. The PMO will arrange for tickets and will provide a travel advance. After return to the office the traveling staff member will prepare a Statement of Expense (SOE). Based on the SOE the balance of the travel cost will be paid to the staff member.

PMO Staff Training

The PMO Staff Training budget line is to cover the cost of training PMO staff in relevant topics. This includes training courses organized by the World Bank office in Beijing, but also training courses organized by others, in Beijing, in China or abroad.

Operating Expenses

The operation expense includes daily expense needed to operate the PMO which are not covered by other categories.

PMO Operation Budget

The total budget for PMO operation is $1,940,000 for three years.

8.2 PMO Activities

This section describes the activities that will be carried out by the PMO and that are not included in the activities and elements described in Chapters 5, 6 and 7. These activities include, but may not be limited to:

- GOC Partnership for Renewable Energy Development
- Preparation of CRESP Phase II
- Outreach and Monitoring

8.2.1 GOC Partnership for Renewable Energy Development

The GOC Partnership for Renewable Energy Development was intended to improve coordination among agencies in China dealing with renewable energy, to avoid overlap and duplication and to direct attention and efforts to renewable energy areas that need more support. Initially the idea was to establish a secretariat for the GOC Partnership, staffed with two professional and one support staff. Because the merger of SETC and SDPC, there is no need to improve coordination between these two agencies. The coordination between NDRC and other agencies also does not require the establishment of a GOC Partnership for Renewable Energy Development secretariat. Instead it was decided that CRESP will

assume some of the tasks envisaged to be carried out by the GOC Partnership secretariat. These tasks include:

- Active collection and dissemination of information on renewable energy activities in China (renewable energy activity database).
- Identification of important and relevant renewable energy areas that receive too little attention and support
- Organize GOC Partnership meetings between donors supporting renewable energy and Chinese government and non-government agencies working on renewable energy projects.

The CRESP PMO will establish a renewable energy activity database and actively collect information on renewable energy activities in China. This database will be accessible from the CRESP internet site. CRESP commits to operate and maintain this internet site for the duration of CRESP. At the end of CRESP, a project or agency will be sought to take over the operation and maintenance of the renewable energy activity database. Earlier attempts to establish such database were unsuccessful, mainly because of the adopted approach. The renewable energy activity database operated under the UNDP project Rapid Commercialization of Renewable Energy relied on the implementing agencies of the renewable energy activity to submit the information on the activity and keep the information updated. This was not successful. Implementing agencies did not submit the information and those who did, did not keep it up to date. The approach adopted by CRESP is active collection of information on renewable energy activities. PMO staff will actively collect information on renewable energy projects and put this information in a database. At regular intervals, the information will be updated by contacting the implementing agencies and ask the current status. This will be done at least once a year.

The information will be presented in a standard format with a number of standard data fields. To maintain sufficient flexibility some data field will be general to include all information considered relevant and which does not fall into the categories established.

Another function envisaged to be carried out is the secretariat was reviewing the total renewable energy field and alert the government and donor agencies when vital areas are not receiving sufficient attention. This will help avoiding that the renewable energy activities in China are too much donor driven and that there is too much focus on one area while other areas do not receive sufficient attention. To fulfill this function, CRESP will initiate a study to review the total renewable energy field, identify the areas most important to China (vital or strategic areas), identify the ongoing and planned activities in these most important areas and identify which strategic areas receive too little (and which receive too much) attention and support. Based on these findings, CRESP will prepare a plan to make sure that all strategic areas are addressed and market this plan to the government and donors. The plan will be as detailed as possible, possibly including even concrete project proposals with budget. CRESP will not implement the proposals, but identify the best suitable agency in China to implement the project. The results of the study will be presented in a national workshop (GOC Partnership Meeting) with government agencies, donors and other relevant parties present. CRESP will organize this meeting. The study will be repeated with intervals of one year.

CRESP will organize meetings between the government, donor agencies and other interesting parties on renewable energy development in China. These meetings are intended to exchange information on renewable energy projects in China. The objective of these meetings is to contribute to better information exchange and, therewith, to avoid overlap and duplication. These meetings will also be used to ask attention for strategic areas that do not receive sufficient attention at the moment. These meetings will be held initially once a year. It should be noted that donors active in China in the field of renewable energy have already established a program of donor information exchange meetings on renewable energy. These meetings are in principle held every 6 months. The agency organizing these meetings rotates among the participating donors. To date 8 of these meetings have been held over a period of about 4 years. The GOC Partnership Meetings need to be coordinated with the donor information exchange meetings. It is possible that the GOC Partnership Meetings will replace the donor information exchange meetings if the donors would prefer this.

8.2.2 Preparation of CRESP Phase II

Phase I of CRESP will be followed by Phase II. The objective of Phase II is formulated as: "Commercial renewable electricity suppliers provide energy to the electricity market, based on an MMP policy in about 10 selected provinces". CRESP will move from Phase I to Phase II after established triggers have been met. About halfway through Phase I, preparation of Phase II will start. This will include preparation of the national level program of Phase II and the program in 10 additional provinces, possibly with continued support for the 4 pilot provinces of Phase I. In the 10 additional provinces the preparation work will focus on identifying the investments and preparing the investment projects.

The main preparation work includes:

- Selection and confirmation of the additional provinces in Phase II;
- Identification and confirmation of the investment projects;
- Assist in preparing the EAP (Environmental Action Plan), SAP (Social Action Plan) and RAP (Resettlement Action Plan) for the investment projects;
- Prepare the PIP's of the investment projects;
- Prepare the PIP for the Institutional Development and Capacity Building Component of Phase II of CRESP;
- Other.

For the preparation of Phase II of CRESP the following milestones must be met:

- Confirm the additional pilot provinces in CY06;
- Final draft PIP's investment projects CY07;
- Final draft PIP for Institutional Development and Capacity Building component CY07.

8.2.3 Outreach and Monitoring

The Outreach and Monitoring activities include, but are not necessarily limited to:

- Outreach and Promotion;
- Meetings and Workshops; and
- Management and Monitoring Studies.

Outreach and Promotion

The Outreach and Promotion activities can, among others, include the following tasks:

- Preparation and production of brochures, booklets, leaflets, exhibition materials etc.
- Writing of newspaper articles.
- Establishing and maintaining the CRESP internet site.

Meetings and Workshops

The Meetings and Workshops activities can, among others, include:

- Donor meetings for the GOC partnership program.
- Steering committee meetings.
- Evaluation and monitoring meeting.
- Annual CRESP progress meetings.
- Consultant meeting, and workshops.

Management and Monitoring Studies

The Management and Monitoring Studies can, among others, include:

- Fact finding studies for monitoring and evaluation purposes.

Studies to assist CRESP management decisions.
Other studies needed to manage CRESP.

Details on these tasks will be included in each annual plan.

8.2.4 Mechanism

All activities funded from the PMO Activities budget are initiated by the PMO. Activities known sufficiently in advance should be included in the annual plans. Upon approval of the annual plans these activities can be initiated without requiring additional approvals other than the normal approvals for selection of consultants. For activities not in the annual plan, the PMO will obtain a World Bank No Objection before initiating the activity.

All activity reports will be prepared in both Chinese and English. Activity results not intended for internal use only will be disseminated using appropriate channels.

Eligible Expenditures

The following cost categories can be supported:
- Consultants (national and international)
- Travel Cost
- Capacity Building (workshops and training)
- Dissemination of results (workshops, reports, leaflets, etc.)
- Documentation (reports, editing, printing and translation)

8.2.5 Budget PMO Activities

The PMO Activities budget is $ 720,000 for a period for 3 years. No separate allocation is made for the 3 activities (GOC Partnership, Preparation Phase II of CRESP and Outreach and Monitoring).

8.3 PMO Consultant Pool

Under the Program Management sub-component, resources are available for contracting short-term national and international consultants to support the PMO in implementing the Institutional Development and Capacity Building component. From this budget also the International Chief Technical Advisor (CTA) will be paid. This is the so-called Consultant Pool. To facilitate quick support, the PMO will establish a roster of qualified national and international experts. The roster will include updated CV's of selected national and international experts, their contact information and other relevant information. The PMO will actively further develop this roster. Consultants not in the roster can also be contracted from the Consultant Pool resources. The PMO will establish a list with qualifications required and collect for each qualification consultant CV's.

For the implementation of some elements described in Chapters 5 and 6, also consultants need to be contracted from the Consultant Pool. Further, consultants needed for implementing the PMO Activities can also be contracted from the Consultant Pool.

8.3.1 Type of Consultants from the Consultant Pool

There are two types of consultants contracted from the Consultant Pool resources. These are: (a) program consultants, and (b) activity consultants.

Program consultants provide general support to the PMO, not only related to one specific activity. These consultants are typically supported for a certain number of days over the longer period (one or 3 years). For project consultants normally time based contracts are used.

Activity consultants are contracted for carrying out a specific activity. The duration of contracts for activity consultants is normally short (typically 4 weeks) over a short period (1 to 6 months). For activity consultants lump sum contracts can be used because the deliverable can be clearly specified.

Project consultants envisaged include:

- National Wind Expert (60-90 days over a period of 3 years)
- National Biomass Expert (30-45 days over a period of 3 years)
- National Small Hydro Expert (30-45 days of a period of 3 years)
- Professional Translator(s) (number of words over a period of 3 years)

8.3.2 Recruitment Procedures

The PMO will follow the normal procurement rules for recruiting consultants from the Consultant Pool. For each assignment a detailed TOR will be prepared, indication the required qualifications for that position. For each assignment at least 3 qualified candidates need to be identified. From at least 3 qualified candidates the most qualified candidate will be selected. For each recruitment, the PMO will prepare a recruitment package and keep this package on file. The procurement package, includes: (i) TOR; (ii) cost estimate; (iii) CV's of at least 3 qualified candidates; (iv) justification of selecting the most qualified candidate; (v) draft contract with proposed fee. If the cost is above the established threshold for post review, the PMO will obtain the World Bank No Objection. For contracts below the threshold, the PMO can proceed with contracting without obtaining a World Bank NOL. The procurement package and all other relevant information need to be kept on file for post review.

If consecutive contracts for one consultant are expected to exceed the threshold, the PMO will obtain a World Bank NOL for the first contract, even if the value of that contract is below the threshold. The TOR should also indicate that follow-up assignments are envisaged.

In case follow-up work was originally not envisaged, but additional contracts are issued to one consultant, the PMO will obtain World Bank No Objection when exceeding cumulatively the threshold for post review. The No Objection is requested for the contract that will cause exceeding the threshold and for subsequent contracts.

The position of International CTA will be advertised in UN Development Business online and in the Development Gateway's dgMarket.

8.3.3 Consultant Pool Budget

The Consultant Pool budget covers the cost of short-term national and international experts to support the PMO with implementing CRESP and the cost of the CTA. The Consultant Pool budget is $720,000 covering a period of 3 years. The cost of the CTA (for a period of 18 months) is estimated at $216,000. The monthly salary of the CTA includes all cost (international travel, housing, transport of personal effects, and all other cost). The CTA will need to pay from this salary any tax if applicable. It is expected

that of the balance ($504,000) half is needed for national experts and the other half for international experts. It includes both project consultants and activity consultants. Details are given in Table 8.3.1.

Table 8.3.1. Consultant Pool Budget

Position	Rate (US$)	Number	Total Cost (US$)
Chief Technical Advisor	12,000 per month	18 months	216,000
National Consultants	Average 170/day	About 1200 days	252,000
International Consultants	Average 700/day	About 300 days	252,000
Total			720,000

9 Reporting Requirements

This Chapter described the reporting requirements of the PMO. Based on the reports prepared by the PMO, NDRC and the World Bank can monitor progress and discuss timely corrective measures when needed.

9.1 Institutional Development and Capacity Building Annual Plans

Before the begin of each calendar year, the PMO will prepare an "Institutional Development and Capacity Building Annual Plan" in which the PMO will specify what activities will be undertaken in the coming calendar year. The Institutional Development and Capacity Building Annual Plan needs to be consistent with the Institutional Development and Capacity Building PIP. It needs to include the required budget for the calendar year and expected disbursement. After approval of the Institutional Development and Capacity Building Annual Plan by NDRC and the No Objection from the World Bank the activities specified in the Institutional Development and Capacity Building Annual Plan are approved and can be implemented without requiring additional approval, except for the required World Bank No Objection for contracts above the threshold. Activities not specified in the Institutional Development and Capacity Building Annual Plan, because these were not known or not considered needed when preparing the annual plan, can still be carried out, subject to approval of NDRC and World Bank No Objection. Such activities requiring GEF grant support of $10,000 equivalent or less do not require World Bank No Objection.

The PMO can develop its own format for the Institutional Development and Capacity Building Annual Plan. The PMO has examples of annual plans prepared by other GEF/World Bank projects in China for reference.

The Draft Institutional Development and Capacity Building Annual Plan will to be submitted to the World Bank for review on or before 31 October. A World Bank No Objection to the annual plan needs to be obtained before 31 December.

As CRESP is expected to start in the middle of 2005, the first Institutional Development and Capacity Building Annual Plan will cover part of 2005 and the whole of 2006. The first Institutional Development and Capacity Building Annual Plan needs a World Bank No Objection before the start of implementing CRESP.

To prepare the IDCB annual plan the PMO needs to obtain inputs from the pilot provinces. For this purpose the PMO will request the provincial DRC's to prepare provincial IDCB annual plans. The Pilot Provinces only need to provide details on activities that are specified by the provincial DRC's and not on the mechanisms such as the CGF Demonstration Projects. These activities are managed by the PMO and do not require annual provincial inputs.

9.2 Quarterly Progress Reports

To inform NDRC and the World Bank on implementation progress, the PMO will prepare quarterly reports. To reduce the burden on the PMO the quarterly reports will only be in the form of reporting tables. The main reporting table will provide for each activity a brief description of progress during the quarter and the status at the end of the quarter. The PMO staff responsible for that particular activity will provide this information. Other reporting tables will be added as annexes. Appropriate reporting tables will be prepared by the PMO during the first quarter of implementing of CRESP. Based on comments from the World Bank team and others, these tables will be further refined to come to a user friendly, quick and convenient reporting system.

Quarterly reports will be submitted to NDRC and the World Bank within one month after the end of the quarter. The PMO will prepare 4 quarterly reports each year.

9.3 Annual Progress Reports

Within 3 months after the end of the calendar year the PMO will prepare a detailed annual report on the progress of CRESP during the year and the status at the end of the year. The format of the annual report will be developed by the PMO. Examples of annual reports from other GEF/World Bank supported projects will be reviewed for guidance. To assure that the annual report meets World Bank quality requirements a No Objection to the annual report from the World Bank will be requested.

9.4 End of CRESP Phase 1 Report

At the End of CRESP Phase 1 a detailed Phase 1 report will be prepared. It will provide an overview of the work carried out during CRESP Phase 1 and the status of all activities at the end of Phase 1. The format for this report will be discussed and agreed at least 6 months before the end of Phase 1.

10 Monitoring and Evaluation

To monitor the progress and evaluate the success of CRESP performance indicators have been established. The PMO needs to follow the progress against these indicators closely. When insufficient progress is made or intermediate targets are not met, the PMO may need to identify ways to address this. Problems with meeting targets should be openly discussed with the World Bank supervision team in order to jointly identify measures to address this. This may require modification of the project approach. When these modifications are minor they can be made when all parties agree. Major modifications will require an amendment of the GEF grant agreement. The indicators established for CRESP are given in Table 10.1.

Table 10.1. CRESP Indicators

	Indicator	Target at 3 years after start Phase 1 of CRESP	Target at 5 years after start Phase 1 of CRESP
1	Market framework in pilot provinces established through laws and		

	Indicator	Target at 3 years after start Phase 1 of CRESP	Target at 5 years after start Phase 1 of CRESP
	regulations		
2	Number of manufacturers/service providers meeting quality standards in wind and biomass		
3	Increased renewable electricity over baseline (TWh/year) and increased renewable capacity over baseline (GW)		
4	Reduced carbon emissions		
5	Enactment of REL and issuing of regulations to implement the law at national level by 2008		
6	Issuing laws and decrees for implementation of REL in pilot provinces (Fujian, Inner Mongolia, Jiangsu and Zhejiang) by 2008		
7	Issuing national standards for wind turbines, availability of testing facilities and certification by 2008		
8	Companies participating in cost-shared technology and service development activities (with emphasis on biomass and wind) by 2008		
9	Pipeline of renewable energy projects under development in the provinces by 2008 (MW capacity in pipeline)		
10	100 MW wind farm at Changjiang'ao, Pingtan Island, Fujian selling 260 GWh/year into local grid		
11	100 MW wind farm at Huitengxile, Desheng County, Inner Mongolia, selling 270 GWh/year into local grid		
12	24 MW straw-fired biomass power plant at Mabei Village Rudong County, Jiangsu, selling 162 GWh/year into local grid		
13	27 MW of small hydro capacity in Zhejiang built or rehabilitated, selling an incremental 56 GWh/year into local grid		

The values for the different indicators will be obtained from the quarterly, annual and Phase 1 reports. Most of these numbers are easily obtainable from CRESP operation. Some, however, are more difficult to obtain or measure. For this the PMO may need to commission separate studies.

11 World Bank Supervision and Evaluation

Two World Bank supervision missions are foreseen annually. To make these supervision missions effective the PMO will prepare these missions well and make sure that all PMO staff is present during these supervision missions. In order to allow sufficient time for preparing these missions, the World Bank will inform the PMO of their plan for supervision mission at least 6 weeks before the mission. The PMO will check internally and with NDRC if the proposed timing is convenient. If not, the PMO will propose alternative dates.

12 Allocation of Grant Proceeds

The use of the GEF grant is categorized in 4 cost categories. These are:

- Consultant Services
- Goods

- Sub-Grants
- Operating Expenses

Operating expenses include all PMO related cost like office rent, office communication, PMO staff travel, etc. The cost of the PMO staff is included in consultant services.

13 Procurement

The PMO will provide in the annual plan the procurement plans for the coming year. Three types of procurement plans are distinguished:

- Procurement of Goods, Works, and Services
- Selection of Consultants
- Cost Shared Grants