

# *APP-REDGTF project* Report on China's Renewable Energy Law

**November 2008**

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# 1. Introduction and summary

## 1.1 Background to this paper

### Asia-Pacific Partnership

The Asia-Pacific Partnership on Clean Development and Climate (*APP*) is a voluntary multi-national partnership between the Governments of seven nations in the Asia-Pacific region – Australia, Canada, China, India, Japan, Republic of Korea and the United States of America. It was launched on 12 January 2006.

The APP aims to strengthen existing bilateral and multilateral arrangements and create an international framework within which the participant nations will co-operate to pursue development, energy, environment and climate change objectives.

The APP's charter states that the purposes of the APP are to:

- Create a voluntary, non-legally binding framework for international cooperation to facilitate the development, diffusion, deployment, and transfer of existing, emerging and longer term cost-effective, cleaner, more efficient technologies and practices among the Partners through concrete and substantial cooperation so as to achieve practical results;
- Promote and create enabling environments to assist in such efforts;
- Facilitate attainment of our respective national pollution reduction, energy security and climate change objectives; and
- Provide a forum for exploring the Partners' respective policy approaches relevant to addressing interlinked development, energy, environment, and climate change issues within the context of clean development goals, and for sharing experiences in developing and implementing respective national development and energy strategies.

### Renewable Energy & Distributed Generation Task Force

APP established eight public-private sectors task forces. The Renewable Energy and Distributed Generation Task Force (*REDGTF*) was formed to focus upon issues associated with renewable energy and distributed generation technologies.

The REDGTF aims to:

- Facilitate the demonstration and deployment of renewable energy and distributed generation technologies in Partnership countries.
- Identify country development needs and the opportunities to deploy renewable energy and distributed generation technologies, systems and practices, and the enabling environments needed to support wide-spread deployment, including in rural, remote and peri-urban applications.
- Enumerate financial and engineering benefits of distributed energy systems that contribute to the economic development and climate goals of the Partnership.
- Promote further collaboration between Partnership members on research, development and implementation of renewable energy technologies including supporting measures such as renewable resource identification, wind forecasting and energy storage technologies.

- Support cooperative projects to deploy renewable and distributed generation technologies to support rural and peri-urban economic development and poverty alleviation.
- Identify potential projects that would enable Partners to assess the applicability of renewable energy and distributed generation to their specific requirements.

### Our project

This paper forms a component of the REDGTF project: Identifying optimal legal frameworks for renewable energy in China and India (the *Project*). The Project is undertaken by Baker & McKenzie and the Renewable Energy and International Law project (*REIL*), with assistance from the Chinese Renewable Energy Industry Association and the World Institute for Sustainable Energy (India). It has funding support from the Australian Government and the US Government under the APP.

The Project will consider and assess the legal, regulatory, institutional and policy frameworks in China and India, and the barriers and opportunities facing the renewable energy sectors in those countries.

The Project also involved hosting workshops in India and China to identify and promote best practice for laws and policies promoting renewable energy in developing countries. The final reports present results of the Project's investigations and make recommendations.

The ultimate aim of the Project is to encourage and enhance the capacity for emission reduction efforts in India and China, by promoting legal and regulatory measures which create an environment within which renewable energy and distributed generation technologies are viable.

The Project, while focused on India and China, is intended to provide policy options and recommendations that could be implemented in all APP partner countries.

## 1.2 China's Renewable Energy Law and this paper

### Introduction to China's Renewable Energy Law

The Renewable Energy Law of the Peoples' Republic of China (*China*) came into effect on 1 January 2006. In June 2007 RELaw Assist produced an issues paper (*June 2007 Paper*), which examined the Renewable Energy Law, and its impact on both China and Australian businesses.<sup>1</sup> It found that the Renewable Energy Law was an essential platform for diversifying China's energy mix, but that its nature as a framework meant that Governmental Regulations and implementing provincial legislation would play a crucial role in the development of China's renewable energy industry.

China's National Development and Reform Commission (*NDRC*) carried out the first official Government review of the Renewable Energy Law in early 2007. The results of the review, including recommendations from Chinese industry stakeholders, were published on 20 April 2007 and were reviewed in the June 2007 Paper. However, the June 2007 Paper was published too early to consider the NDRC's Medium and Long-Term Development Plan for Renewable Energy in China. In addition, a host of new environmentally focussed law

<sup>1</sup> *RELaw Assist* Renewable Energy Law in China – Issues Paper, June 2007, available at: [www.bakernet.com](http://www.bakernet.com)

and policy has been proposed and/or passed by the Chinese Government (see section 2.2 below).

These developments will have a direct impact both within China and on the investment analyses that Australian businesses will need to undertake when considering China as an investment opportunity.

### Aims of this review of the Renewable Energy Law

The purpose of the June 2007 Paper was, among other things, to assist the Chinese Government, both at national and regional levels, to implement the detailed regulations under the Renewable Energy Law. In doing so, RELaw Assist examined aspects of existing Chinese legislation or detailed regulations that needed further elaboration or improvement, based on the needs and practice of Government and industry, and drawing on the experience of Australian renewable energy project developers in developing renewable energy projects in a more mature market.

The purpose of this paper is to review the implementation of the Renewable Energy Law since the publication of the June 2007 Paper. As such, it builds on the themes set out in the June 2007 Paper, particularly with respect to regulatory achievements, policy challenges, the current state of implementation and future issues that will need to be addressed. It is not intended to be an encyclopaedic guide to investing in Chinese renewable energy projects (potential investors should always take project specific legal advice). However, it does outline key national law and policy, together with selected examples of provincial implementation of which investing businesses should be aware.

### Structure of this paper

Following this summary, this paper is divided into three sections. The first (section 2) sets out a summary of the Renewable Energy Law. It is intended to provide an introduction to those unfamiliar with the primary legal rules that the Chinese Government has introduced to date. It concludes with an overview of recent developments in law and policy since the publication of the June 2007 Paper.

Section 3 examines the law and policy identified in section 2 in more detail, looking at specific aspects of the Renewable Energy Law and its impact on potential investors. In doing so, it first considers regulation at the national level, before examining selected provincial examples that are indicative of how the national rules have been implemented. Each sub-section in this part of the study concludes by highlighting the key issues that are not yet resolved.

Finally, section 4 looks at the present state of the Chinese renewable energy market, in relation to wind and solar power. It examines particular obstacles both from a technical, legal and policy point of view. In doing so, it uses the study of section 3 and applies it to each of the technologies considered.

## 1.3 Implementation of the Renewable Energy Law

### *Drafting Note*

*This sub-section should highlight in brief the main findings from section 3. The headings set out below mirror those used in that section. Each summary should identify (1) any key developments since the publication of the June 2007 Paper, (2) and key outstanding issues that remain, together with (3) proposals for reform (if any).*

#### **A. Targets**

*[insert summary]*

#### **B. Price setting**

*[insert summary]*

#### **C. Cost sharing arrangements**

*[insert summary]*

#### **D. Grid connections**

*[insert summary]*

#### **E. Regulatory approval**

*[insert summary]*

#### **F. Investment incentives**

*[insert summary]*

#### **G. Technical standards**

*[insert summary]*

#### **H. Resource data**

*[insert summary]*

#### **I. System design and support issues**

*[insert summary]*

### **1.4 China's renewable energy market – key issues by technology type**

#### ***Drafting Note***

*This sub-section should highlight the main findings from section 3. As with the summary of the implementation of the Renewable Energy Law, the following sub-section should follow*

*the same structure as the text that it summarises (the relevant sub-sections are set out below).*

*Each sub-section should summarise, to the extent that it is possible, (1) a very high-level overview of the current utilisation of the relevant technology and (2) any particular issues that a business should consider before investing (this may include, for example, problems about lack of capacity or particular legal or policy problems that may hinder the development of a project).*

*As a general guide, this section should only include the most significant impediments to investing in renewable energy projects in China.*

We have identified the following key issues of which an investor should be aware before investing in the following types of renewable energy projects in China.

#### **A. Wind**

*[insert summary]*

#### **B. Solar**

*[insert summary]*

#### **C. Hydro Power**

Hydro power is not eligible for support under the RE Law.

#### **D. Biomass / Biofuel**

Little information is available on the uptake of biomass and biofuels in China. Currently most projects use corn as the fuel. However, the Chinese Government has prohibited any further increase in the capacity for biomass and biofuels.

#### **E. Geothermal**

To date there has been little development of geothermal power projects in China. However, Beijing Huaqing Geothermal Development Co. Ltd is to develop a geothermal heat pump system for the World Expo 2010 in Shanghai, China.

## 2. Legislative Background – Renewable Energy in China

### 2.1 Formation of the Renewable Energy Law

#### Legislative division of responsibilities

Under Chinese law, all powers, unless delegated, are centrally exercised by the State Council, which is led by the Premier. The Premier puts forth laws from the National People's Congress and Standing Committee. Accordingly, the National People's Congress and its Standing Committee pass national laws, while the State Council enacts administrative rules and Local People's Congresses make local regulations. An illustration of the legislative process, together with an description of China's hierarchy of laws can be found in chapter 1.2 of the June 2007 Paper.

#### Rules comprising the Renewable Energy Law

The Renewable Energy Law is a framework that sets the overarching policies that drive the development of the Chinese renewable energy industry. Its importance stems from the fact that the development of the industry is, for the first, put on a statutory footing. The overarching policies enshrined in the Renewable Energy Law are put into practice through implementing regulations.

Under the institutional framework of China, the Central Government is responsible for the formulation of such national regulations which guide individual provinces during the implementation process. Instructions regarding pricing, cost-sharing, taxation and the project approvals process are stipulated by the Central Government for the provincial government to follow.

However, since there are great disparities between various provinces in terms of resource availability, industrial capacity and demand, in some cases provincial governments have needed to formulate their own detailed provisions for their area within the Central Government's general policy framework. Selected examples of provincial implementing measures are considered in section 3.

Notwithstanding the introduction of the national and provincial regulations, it should be noted that the implementation of the Renewable

#### THE RENEWABLE ENERGY LAW – IN BRIEF

The Renewable Energy Law entered into force on 1 January 2006 and covers energy generated from all non-fossil sources (with the exception of nuclear generation). It provides the framework for legislative initiatives, designed to secure the strategic position and future development of renewable energy.

These include:

- Renewable energy targets, including both economy-wide and technology-specific targets;
- Compulsory grid connection for renewable energy facilities to the State electricity grid;
- Power pricing arrangements, including feed-in tariffs and competitive tendering systems, to allow renewable energy to compete with traditional, fossil fuel-powered generation; and
- Cost sharing arrangements to divide the costs of renewable energy generation and grid connection equitably amongst utilities and electricity end users.

Energy Law is an ongoing process. The key recent developments since the publication of the June 2007 Paper are set out in section 2.2 below.

### Key law and policy texts implementing the Renewable Energy Law

In addition to national and provincial regulations, policy documents and technical standards have been (and continue to be) published, which provide guidance on specific topics. These texts are mentioned in the relevant sections of the this study, and Appendix 2 provides an overview of the national implementing texts.

## 2.2 Recent developments in Chinese law

### *Drafting Note*

*The purpose of this sub-section is to set out the key recent developments in Chinese law (i.e. since the publication of the June 2007 Paper) that have a bearing on the implementation of the Renewable Energy Law. The developments should not be discussed in detail (such discussion should be reserved for the section 3 below).*

### Developments in national legislation

*[We think that, at minimum, the following developments should be considered. Please include any others that you think are appropriate to include here:*

- *Discussion of the New Energy Law: We understand that the Renewable Energy Law and its implementing provincial legislation will operate, essentially, unchanged (assuming that its provisions are substantially in the same form as those put forward in draft form). However, we think that it should be considered here as it is not clear whether new high level principles enshrined in the New Energy Law will have an impact on businesses thinking of investing in renewable energy in China.*
- *Conservation Law: we understand that a new Energy Conservation Law came into effect on 1 April 2008. This references renewable energy in a number of places (see Article 7, 40 and 59) and its impact on the investment in renewable energy should be noted here.*
- *The publication of the National Eleventh Five-Year Plan for Environmental Protection (2006-2010) (March 5, 2008)*
- *New Catalogue: we understand that the NDRC released the latest Catalogue for the Guidance of Foreign Investment Industries on November 7, 2007, which replaces the 2004 version, and which came into force on December 1, 2007. Any new listings that may have an impact on investing in renewable energy should be outlined here.]*

**Developments in provincial implementation of the Renewable Energy Law**

**Drafting Note**

*The purpose of this sub-section is not to provide an exhaustive list of new provincial developments. Instead, it should identify any key trends in respect of implementing measures and any examples that are notable because of their impact on foreign investors.*

*[Insert an overview of notable new developments at the provincial level.]*

**2.3 Recommendations from the June 2007 Paper**

The June 2007 Paper highlighted a number of significant issues that needed to be addressed to give full effect to the Renewable Energy Law (see chapters 3-5 of the June 2007 Paper). These are summarised below for convenience, together with an indication of where the recommendations are revisited in this paper (see the 'relevant section' column).

**SUMMARY OF RECOMMENDATIONS IN JUNE 2007 PAPER**

ISSUE	RECOMMENDATION	RELEVANT SECTION
<b>Targets</b>	<ul style="list-style-type: none"> <li>Consider the implementation of utility-level renewable energy targets and a tradeable certificate scheme to effectively link overall targets with chosen policy mechanisms.</li> </ul>	3.1
	<ul style="list-style-type: none"> <li>Alternatively, consider strict reporting arrangements to ensure that feed-in tariffs are sufficient to meet established overall renewable energy targets.</li> </ul>	
	<ul style="list-style-type: none"> <li>A quota system that requires major power generators to develop a certain number of renewable energy projects could be developed and implemented.</li> </ul>	
<b>Pricing policy</b>	<ul style="list-style-type: none"> <li>A feed-in tariff regime for the wind energy industry should be reintroduced in consultation with industry.</li> </ul>	3.2
	<ul style="list-style-type: none"> <li>Competitive tendering schemes should be combined with robust technical standards and a floor price to prevent gaming, low contract implementation rates and poor quality projects.</li> </ul>	
	<ul style="list-style-type: none"> <li>When the solar power industry is considered sufficiently developed (or to assist in its development), separate government approvals should not be required for solar projects and a predictable and sufficient feed-in tariff should be introduced. Alternatively other forms of support such as tax incentives and/or seed funding could be provided.</li> </ul>	
	<ul style="list-style-type: none"> <li>Clarify any existing feed-in tariffs and other support mechanisms at a provincial level and specify how these will be affected by the implementation of the Renewable Energy Law and regulations.</li> </ul>	
	<ul style="list-style-type: none"> <li>Favourable grid connection and pricing regulations for small hydropower projects, which are usually rejected by power grids, need to be developed.</li> </ul>	3.4

Comment [BMCK1]: Check these are correct

ISSUE	RECOMMENDATION	RELEVANT SECTION
	<ul style="list-style-type: none"> <li>The details of how the cost-sharing revenue will be divided among the 31 provinces, and how the additional costs will be borne by energy utilities, need to be clarified.</li> </ul>	3.3
<b>Approvals process</b>	<ul style="list-style-type: none"> <li>Clarify the responsibilities of each level of government in the approvals process.</li> </ul>	
	<ul style="list-style-type: none"> <li>Clarify and streamline the overlap between the renewable energy approvals process and the foreign investment approvals process.</li> </ul>	
<b>Financial incentives</b>	<ul style="list-style-type: none"> <li>Clarify the details of financial incentive programs for solar photovoltaic power generation and biofuels, as well as the tax and loan arrangements.</li> </ul>	3.6
	<ul style="list-style-type: none"> <li>Consider international best practice for effective tax incentives, loans and funding for renewable energy projects, including tying assistance to technical standards and project lifetime output goals.</li> </ul>	
	<ul style="list-style-type: none"> <li>Ensure that the process for applying for and the criteria for receiving such incentives are clear and easily available, in several languages.</li> </ul>	
<b>System design and support issues</b>	<ul style="list-style-type: none"> <li>Establish a mechanism to enable sharing of experience and knowledge between local and provincial government across the country to maximise learning and avoid repeating mistakes.</li> </ul>	3.9
	<ul style="list-style-type: none"> <li>Implement training, education and outreach programs at a provincial and local level, targeting government officers, power utilities, investors and banks, to ensure the Renewable Energy Law is adequately implemented. Australian Government and industry could assist in the implementation of these programs by sharing its experience in policy formulation and implementation, project financing and development, and other issues.</li> </ul>	
	<ul style="list-style-type: none"> <li>Monitor the effectiveness of existing regulations and revise them based on feedback from industry.</li> </ul>	3.1
	<ul style="list-style-type: none"> <li>Consider a system to ensure that targets and tariffs are complied with, including penalties for breach.</li> </ul>	
	<ul style="list-style-type: none"> <li>Establish a dedicated renewable energy office in each province to share information with the NDRC, with annual reporting requirements.</li> </ul>	
<b>Technical issues</b>	<ul style="list-style-type: none"> <li>Design and implement large-scale efficient transmission networks to deliver energy from renewable sources around China and allow the grid to support large-scale renewable energy projects.</li> </ul>	3.7
	<ul style="list-style-type: none"> <li>Implement further technical standards to build China's renewable energy in light of its limited experience (e.g. standards for the bio-fuel productions to allow for larger scale application). Australian technical bodies and consultants may be able to assist with developing appropriate standards.</li> </ul>	3.7

Comment [BMCK1]: Check these are correct

ISSUE	RECOMMENDATION	RELEVANT SECTION
	<ul style="list-style-type: none"> <li>Require manufacturing and consultant companies to provide warranties to government authorities that products meet technical standards, and require independent verification of estimates and designs, to put commercial pressure on companies to deliver high-quality products.</li> </ul>	
	<ul style="list-style-type: none"> <li>Implement a national approach to resource assessment such as wind mapping. Conduct training in resource assessment and make methods and results available to developers.</li> </ul>	3.8
<b>Intellectual property rights</b>	<ul style="list-style-type: none"> <li>Strengthen enforcement of intellectual property rights at the provincial/local government level.</li> </ul>	3.6
	<ul style="list-style-type: none"> <li>Develop a code of practice for renewable energy technology transfer.</li> </ul>	
<b>Other issues requiring clarification</b>	<ul style="list-style-type: none"> <li>The National Renewable Energy Development Plan should be published as soon as possible, to guide the development of the renewable energy industry and create certainty for investors.</li> </ul>	3.1
	<ul style="list-style-type: none"> <li>Environmental protection regulations for large hydropower projects need to be clarified.</li> </ul>	3.7
	<ul style="list-style-type: none"> <li>Clarify the foreign ownership restrictions for renewable energy projects conducted under the CDM.</li> </ul>	3.6
	<ul style="list-style-type: none"> <li>Clarify ownership rights to renewable energy facilities (e.g. wind turbines) built on land that is the subject of a government concession.</li> </ul>	
	<ul style="list-style-type: none"> <li>Clarify who is responsible for decommissioning facilities at the end of the project life.</li> </ul>	

Comment [BMCK1]: Check these are correct

## 3. Implementation of the Renewable Energy Law

### 3.1 Renewable Energy Targets

#### *Drafting Note*

*Each of the following sub-sections (3.1-3.9) should follow the same format:*

**A:** *an introductory section that sets out the basic framework law (the yellow box);*

**B:** *a section that identifies the relevant national regulations, policies and technical standards;*

**C:** *a section that looks at provincial implementation. This section should only highlight notable provincial implementing laws; and*

**D:** *A section that outlines any outstanding issues (the blue box). This paragraph should start with by setting out the relevant recommendations from the June 2007 Paper. It should then consider whether these have been met (as well as highlighting any other issues that are outstanding but which were not considered in the recommendations of the June 2007 Paper).*

*Overall drafting note: Sections A-C are intended to be descriptive and should provide an overview only. Note the inclusion of the Appendix 2, which is intended to provide an overview of the relevant implementing measures.*

*In contrast, section D should be more detailed, discussing the implementation of the Renewable Energy Law using the recommendations of the June 2007 Paper as the starting point.*

#### **A. Introduction**

As noted in the June 2007 Paper, China's renewable energy industry is growing rapidly. At the moment, renewable energy accounts for roughly 8 per cent of China's energy supplies. However, even though this figure represents a notable increase in the use of renewable (even since the publication of the June 2007 Paper), it is dwarfed by China's use of coal, which supplies almost 70% of the country's energy needs.<sup>2</sup>

Chinese renewable energy targets originate in Articles 4, 7 and 8 of the Renewable Energy Law:

#### **Relevant provisions of the Renewable Energy Law**

**Article 4** notes the development of renewable energy as a priority for the Chinese Government, and states that this aim can be promoted by establishing overall generation targets for renewable energy and taking corresponding measures to achieve them.

**Article 7** adds detail to Article 4, by requiring that the State Council sets national medium and long-

<sup>2</sup> Source: *Powering China's Development, the Role of Renewable Energy*, Worldwatch Special Report (E. Martinot and Li Junfeng), November 2007

term targets that will foster the development of renewable energy in China. As part of its remit, the State Council is required to liaise with the relevant authorities in the provinces, regions and/or municipalities.

**Article 8** requires that the State Council prepares a national renewable energy development and utilisation plan, which can be reviewed subject to the approval of the State Council. It also provides for the implementation of that plan by provincial authorities.

## B. National regulations, policies and technical standards

The central national text that gives substance to the target policies enshrined in the Renewable Energy Law is the Medium and Long-Term Development Plan for Renewable Energy in China, issued by the NDRC in September 2007, which is referred to in Article 8 of the Renewable Energy Law (*Medium and Long-Term Development Plan*).

In summary, the Medium and Long-Term Development Plan sets the following targets indicated in the following table.

### TARGETS UNDER MEDIUM AND LONG-TERM DEVELOPMENT PLAN

RENEWABLE ENERGY	2006 ACTUAL	2010 TARGET	2020 TARGET
Proportion of Renewable Energy in national energy mix	8%	10%	15%
Hydropower (gigawatts)	130	190	300
Wind power (gigawatts)	2.6	10	30
Biomass (gigawatts)	2.0	5.5	30
Solar (PV) (gigawatts)	0.08	0.3	1.8
Solar (hot water) (million square metres)	100	150	200
Ethanol (million tons)	1	2	10
Biodiesel (million tons)	0.05	0.2	2
Biomass (million tons)	~0	1	50
Biogas and biomass gasification (billion cubic metres)	8	19	44

Source: *Powering China's Development, the Role of Renewable Energy*, Worldwatch Special Report (E. Martinot and Li Junfeng), November 2007

[We think that this sub-section should outline the following:

- *the purpose of the Medium and Long-Term Development Plan (i.e. to promote the development of renewable energy technologies, to produce "homegrown" equipment, and related IP rights etc).*
- *the cost of the Medium and Long-Term Development Plan, which we understand to be in the region of 2 trillion yuan (\$266 billion).*
- *how that cost will be financed.*

- *what that cost will be directed primarily towards (e.g. number of jobs created, new entities established).*
- *how the Medium and Long-Term Development Plan encourages local authorities to set up funds to subsidise renewables.*
- *how the Medium and Long-Term Development Plan promises income tax breaks for companies that develop the technology (and whether such tax breaks will be available for companies that have a foreign interest).*

*This section should also refer to any regulations/ other measures that have a direct impact on the targets set out in the Medium and Long-Term Development Plan.]*

### C. Selected provincial examples

*[The sub-section should briefly highlight any notable provincial measures that aim implement the targets referred to above. Set out below is a table (taken from the June 2007 Paper), which shows the types of provincial measures that may be relevant. Please note that the following measures may be relevant to a number of sections.]*

TABLE OF PROVINCIAL MEASURES

REGION NAME	REGULATIONS OR OTHER DOCUMENT	RESPONSIBLE OFFICE
Shanghai	White book for energy policy, which includes the renewable energy development plan	Local DRC
Hainan/Xintai	Regulation to promote integration of solar hot water into buildings	Provincial construction bureau
Shenzhen	Regulation to promote integration of solar hot water into buildings	City construction bureau
Baoding/Kunshan,Wuxi	Establish industrial base of renewable energy power generation	Local government
Yunnan	Certification requirements for installation of solar systems into buildings and set up a regional standards for solar building integration	Provincial construction bureau
Beijing	Regulation for promoting solar systems in rural areas	Local DRC
Shandong	Measures for promoting biogas and renewable energy in rural areas	Provincial government
Hunan	Regulation for renewable energy development in rural areas	Provincial government
Guangdong	Measures for promoting solar energy development, set up a fixed price for wind power as 0.68 Yuan/kWh	Provincial government
Sichuan	Measures for promoting biogas development in rural areas	Provincial government

**D. Outstanding issues**

**Drafting Note**

*Each section D should start with the relevant recommendations set out in the June 2007 Paper – we have set these out for all of the relevant categories. It should consider whether the recommendations have been followed and whether there are any issues of which potential investors should be aware.*

*As noted above, the general drafting approach should be that the outstanding issues in the blue box should be generic, except where the recommendations refer to specific technologies.*

JUNE 2007 RECOMMENDATIONS
<ul style="list-style-type: none"> <li>Consider the implementation of utility-level renewable energy targets and a tradeable certificate scheme to effectively link overall targets with chosen policy mechanisms.</li> </ul>
<ul style="list-style-type: none"> <li>Alternatively, consider strict reporting arrangements to ensure that feed-in tariffs are sufficient to meet established overall renewable energy targets.</li> </ul>
<ul style="list-style-type: none"> <li>A quota system that requires major power generators to develop a certain number of renewable energy projects could be developed and implemented.</li> </ul>
<ul style="list-style-type: none"> <li>Consider a system to ensure that targets and tariffs are complied with, including penalties for breach.</li> </ul>
<ul style="list-style-type: none"> <li>The National Renewable Energy Development Plan should be published as soon as possible, to guide the development of the renewable energy industry and create certainty for investors.</li> </ul>

[insert text]

**Key issues of which potential investors should be aware**

Generally speaking, the renewable energy market is over heated in China after 2006 and 2007, based on following reason:

Issue: The wind farmer installation is over 3400 MW in 2007 and it estimated the installation of wind power in 2008 will be over 5 GW, and it will be 25 GW by 2010 and 35 to 40 GW by 2012. However, the grid capability will be battle neck for the wind power connection in the next few year.

Recommendations: the government should force the grid companies to increase the capacity of grid for the wind power connection and the developers should make investigation for power connection before the investment.

Issue: there are more than 50 manufacture with total manufacture capacity of 10 GW and it will be about 15 to 20 GW by 2012. In other word, there will be over supply issue after 2012 for wind turbines.

Recommendation: reduce the investment for WTG manufacture. At least be careful for the investment activity for WTG manufacturing.

Issue: there are about 2000 MW PV module manufacture in middle of 2008, the estimated capacity by 2015 will be more than 15 GW. However the local market is till sleep in China.

Recommendation: slow down the investment activities for solar module manufacture and starting the domestic market as soon as possible.

### 3.2 Price setting

**Drafting Note**

Generally, see the drafting notes in relation to section 3.1 above to complete this section.

#### A. Introduction

Price is the key barrier to the commercialisation of renewable energy as a form of mainstream energy. Therefore it is crucial that the Renewable Energy Law effectively addresses the differential between the price for fossil-fuel power and for renewable energy.

The price of renewable energy is set in one of two ways: governmental designated price (feed-in tariff) and governmental guided price. The latter is the bidding price proposed by the successful bidder through the tendering process.

The way in which prices are intended to be set for each type of renewable energy is briefly summarised below.

**HOW PRICES ARE SET FOR EACH TYPE OF RENEWABLE ENERGY**

TYPE OF RENEWABLE ENERGY	PRICE SETTING MECHANISM
Wind	A governmental guided price, which is established through the tendering process organized by the price-charging department of the national council. However, in practice prices may be established in other ways, as discussed in more detail in section 4.1.
Solar	Determined on a project-by-project basis. Recently the NDRC approved 4 Yuan/kWh for solar PV projects in Inner Mongolia and Shanghai.
Biomass and Biofuel	While the Renewable Energy Law provides that the price of biomass may be determined by tender, the practice in China is to set a feed-in tariff.
Geothermal	Determined on a project-by-project basis.
Hydropower	The renewable energy price system does not apply for hydropower. Prices are determined on a project-by-project basis. Projects of 50 MW and above are approved by the NDRC. Projects below that size are approved the provincial DRC.

**Relevant provisions of the Renewable Energy Law**

**Article 19**—Grid power price of renewable energy power generation projects shall be determined by the price authorities of the State Council in the principle of being beneficial to the development and utilization of renewable energy and being economic and reasonable, where timely adjustment shall be made on the basis of the development of technology for the development and utilization of renewable energy. The price for grid-connected power shall be publicized.

For the price of grid-connected power of renewable power generation projects determined through tender as stipulated in the 3<sup>rd</sup> paragraph of Article 13 hereof, the bid-winning price shall be implemented; however, such a price shall not exceed the level of grid-connected power of similar renewable power generation projects.

**Article 22**—For the selling price of power generated from independent renewable energy power

system invested or subsidized by the Government, classified selling price of the same area shall be adopted, and the excess between its reasonable operation, management expenses and the selling price shall be shared on the basis of the method as specified in Article 20 hereof.

**Article 23**—The price of renewable heat and natural gas that enters the urban pipeline shall be determined on the basis of price management authorities in the principle of being beneficial to the development and utilization of renewable energy and being economic and reasonable.

## B. National regulations and policies

*[This sub-section should briefly outline the regulations, standards etc that are directly relevant to the implementation of price setting policies under the Renewable Energy Law, e.g. the Provisional Administrative Measures on Pricing and Cost Sharing for Renewable Energy Power Generation (NDRC Price [2006] No. 7).]*

### Relevant provisions of the Provisional Administrative Measures on Pricing and Cost Sharing for Renewable Energy Power Generation (NDRC Price [2006] No.7 – here called the NDRC Price Measure)

#### Chapter 1. General Principles

**Article 1.** In compliance with the Renewable Energy Law of the People's Republic of China and the Price Law of the People's Republic of China, the Measures is formulated to promote the development of renewable energy power generation industry.

**Article 2.** The scope of application of the Measures includes wind, biomass (including power generation from forest and agricultural waste through direct combustion and gasification, solid waste incineration, landfill gas, biogas), solar, geothermal and ocean power generation.

Prevailing regulations on hydropower tariff are still in effect.

**Article 3.** Renewable energy power generation projects within the boundaries of the People's Republic of China and those to be approved for construction by the relevant governmental authorities in 2006 and beyond shall be governed by the Measures while projects approved for construction by the relevant governmental authorities before December 31, 2005 shall be governed by the relevant existing regulations.

**Article 4.** Code for pricing and cost sharing for renewable energy power generation projects sticks to the principle of development promotion, efficiency enhancement, standardized administration and fair share.

**Article 5.** Tariffs for renewable energy power generation are categorized into Government Fixed Price and the Guidance Price of the Government. The Guidance Price of the Government refers to the awarded tariff of the bid winner through competitive tendering.

The incremental cost of renewable energy power generation over the yardstick feed-in tariff for desulphurizing coal-fired generating units shall be shared among the sales volume of electricity in power grids at the provincial or above level.

#### Chapter 2. Pricing of Electricity

**Article 6.** The Guidance Price of the Government applies to the feed-in tariff for wind power projects and the pricing standards will be determined through bidding by the price authorities of the State Council.

**Article 7.** For biomass power generation projects where the government fixed price applies, the price authorities of the State Council shall set yardstick tariff by region and the price standard shall be the addition of yardstick feed-in tariff for desulphurizing coal-fired generating units in 2005 in respective provinces (autonomous regions, municipalities directly under the Central Government) and subsidy

price.

The subsidy price is 0.25CNY per kilowatt-hour. 15 years of subsidy price shall be enjoyed for power projects starting from the date of power production; the subsidy price shall be annulled after 15 years of operation.

Since 2010, the subsidy price for power generation projects newly approved for construction by the relevant government authorities each and every year shall be decreased by 2% over that approved for construction in the preceding year.

Mixed-fuel power generation projects with the conventional energy exceeding 20% in heat consumption for power production shall be regarded as conventional energy power generation projects and the yardstick tariff of local thermal power plants shall apply without enjoying the subsidy price.

**Article 8.** For biomass power generation projects with feed-in tariff set through investor bidding, the guidance price of the government shall apply, i.e. the price of the bid winner which shall not be higher than the local yardstick tariff.

**Article 9.** The Government Fixed Price applies to solar, ocean and geothermal power generation projects and the price standard shall be determined in the principle of reasonable costs plus reasonable profits by the price authorities of the State Council.

**Article 10.** Sales price to the end-user for public independent power systems from renewable energy is subject to categorized sales price of the local provincial power grid.

**Article 11.** Power end-users are encouraged to purchase electricity from renewable energy of free will and the tariff is the addition of the power generation price of renewable energy and the average transmission and distribution price of the grid.

### Chapter 3. Cost sharing mechanism

**Article 12.** The incremental cost of: feed-in tariff for renewable energy power generation over the yardstick feed-in tariff for desulphurizing coal-fired generating units, O&M costs of state-invested or subsidized public independent power systems from renewable energy over the average electricity sales price of the local provincial grid as well as the grid connection cost of renewable energy power generation projects will be settled via tariff surcharge levied on the electricity end-users.

**Article 13.** The renewable energy tariff surcharge shall be levied on the electricity end-users within the service scope of the provincial and above grid enterprises (including wholesale customers, of the provincial grid enterprises, auxiliary power plants, large accounts directly purchasing electricity from the power plants). End-users of county self-provided power grids, end-users in Tibet area and those engaged in agricultural production shall be exempted from such tariff surcharge.

**Article 14.** Renewable energy tariff surcharge shall be verified by the price authorities of the State Council and metered according to the actual power consumption of the end-users adopting the unified standards throughout China.

**Article 15.** Calculation formulas for the renewable energy tariff surcharge:

Renewable energy tariff surcharge = the total amount of renewable energy tariff surcharge / total sales volume of electricity at a price with the tariff surcharge throughout China.

the total amount of renewable energy tariff surcharge =  $\sum$  [(renewable energy power generation price - the yardstick tariff for desulphurizing coal-fired generating units of the local provincial power grid) \* renewable energy power purchased by the power grid + (O&M costs of public independent power systems from renewable energy - the average electricity sales price of the local provincial grid) \* sales volume of public independent power systems from renewable energy] + the grid connection cost of renewable energy power generation projects and other reasonable charges]

Therein:

- (1) total sales volume of electricity at a price with the tariff surcharge throughout China = total sales volume of electricity of the provincial or above grid enterprises during the planning period - power consumption for agricultural production - sales volume of electricity of the Tibetan grid.
- (2) renewable energy power purchased by the power grid = planned power generation from renewable energy – power consumption within the power plant
- (3) O&M costs of public independent power systems from renewable energy = operating cost for public independent power systems from renewable energy \* (1+VAT rate).
- (4) the grid connection cost of renewable energy power generation projects and other reasonable charges refer to the engineering investment and O&M costs incurred specifically for the grid connection system of renewable energy power projects, based on the design documents from the relevant government departments. Before the transmission and distribution cost is defined by the State, the grid connection cost shall be temporarily included in the renewable energy tariff surcharge.

**Article 16.** The total amount of renewable energy tariff surcharge to be apportioned among the provincial grid enterprises is defined according to the proportion of sales volume of electricity at a price with tariff surcharge of the provincial grid enterprises in the total sales volume of electricity at a price with the tariff surcharge throughout China.

Calculation formula as follows:

The total amount of tariff surcharge to be apportioned among the provincial grid enterprises = the national total of renewable energy tariff surcharge \* sales volume of electricity at a price with the tariff surcharge within the service scope of provincial grid enterprise / national sales volume of electricity at a price with tariff surcharge.

**Article 17.** The renewable energy tariff surcharge shall be included in the sales price of grid enterprises, levied by the grid enterprises and kept in separate accounts to be used for specific purposes. Subject to the detailed regulations governed by the state council for preferential tax policies concerned.

**Article 18.** The renewable energy tariff surcharge shall be adjusted on a timely basis by the price authorities of the State Council according to the actual situation in the development of renewable energy and the adjustment cycle shall not be less than one year.

**Article 19.** The difference between the subsidy electricity fare actually paid by the provincial grid enterprises and the grid connection costs incurred for renewable energy power generation projects and the apportioned amount of tariff surcharge payable shall be subject to unified allocation in China. Concrete administrative measures will be formulated by the electricity regulatory departments according to the Measures and submitted to the price authorities of the State Council for approval.

#### **Chapter 4. Miscellaneous**

**Article 20.** Renewable energy power generation and grid enterprises shall record and maintain relevant data such as trade volume, price, and amount of power generated from renewable energy to the grid on a true and complete basis and shall accept the inspection and supervision of price authorities, electricity regulatory institutions and auditing departments.

**Article 21.** Any failure to implement the Measures resulting in loss of corporate and state benefits shall be scrutinized by the price authorities of the State Council, the electricity regulatory departments and auditing departments and the major responsible person shall be tracked down for his responsibilities.

**Article 22.** The Measure shall take effect on January 1, 2006.

**Article 23.** The Measures shall be construed by the National Development and Reform Commission.

**C. Selected provincial examples**

In Guangdong province, a unified feed-in tariff has been implemented for wind power projects. In addition to national wind power concession projects, since March 2008 the tariff for new wind power projects was fixed at 0.68 Yuan per kWh, tax included.

**D. Outstanding issues**

*[In this section we note that the recommendations refer to specific technologies. As such, this section will need to consider each technology. In this context, we note that practice and law may differ (see e.g. in relation to biomass and biofuel energy. Where this is the case, please highlight this discrepancy.*

*In light of the fact that Chapter 2.6 of the June 2007 Paper discusses the tendering and feed-in tariffs extensively, it is enough to build on that section and just outline here the current position (rather than the rationale/history of the different schemes.)*

JUNE 2007 RECOMMENDATIONS
<ul style="list-style-type: none"> <li>A feed-in tariff regime for the wind energy industry should be reintroduced in consultation with industry.</li> </ul>
<ul style="list-style-type: none"> <li>Competitive tendering schemes should be combined with robust technical standards and a floor price to prevent gaming, low contract implementation rates and poor quality projects.</li> </ul>
<ul style="list-style-type: none"> <li>When the solar power industry is considered sufficiently developed (or to assist in its development), separate government approvals should not be required for solar projects and a predictable and sufficient feed-in tariff should be introduced. Alternatively other forms of support such as tax incentives and/or seed funding could be provided.</li> </ul>
<ul style="list-style-type: none"> <li>Clarify any existing feed-in tariffs and other support mechanisms at a provincial level and specify how these will be affected by the implementation of the Renewable Energy Law and regulations.</li> </ul>

**Key issues of which potential investors should be aware**

In general, the wind price in China is lower than in other countries, with a marginal financial situation without CDM revenue. International investors should be careful to calculate the financial balance, since CDM revenue is not available for them.

**3.3 Cost sharing**

**A. Introduction**

*[The introduction should briefly refer back to the June 2007 Paper (see Chapter 2.7), which discusses the aim of cost sharing, to require that all consumers collectively share the extra costs resulting from the development of renewable energy.*

*The introduction should also note direct subsidies given to renewable energy projects.]*

**Relevant provisions of the Renewable Energy Law**

**Article 20**—The excess between the expenses that power grid enterprises purchase renewable power on the basis of the price determined in Article 19 hereof and the expenses incurred in the purchase of

average power price generated with conventional energy shall be shared in the selling price. Price authorities of the State Council shall prepare specific methods.

**Article 21**—Grid connection expenses paid by grid enterprises for the purchase of renewable power and other reasonable expenses may be included into the grid enterprise power transmission cost and retrieved from the selling price.

**Article 22**—For the selling price of power generated from independent renewable energy power system invested or subsidized by the Government, classified selling price of the same area shall be adopted, and the excess between its reasonable operation, management expenses and the selling price shall be shared on the basis of the method as specified in Article 20 hereof.

## B. National regulations, policies and technical standards

[We understand that a number of regulations are relevant to cost sharing, e.g.

- *Provisional administrative measures on pricing and cost sharing for renewable energy power generation (NDRC Price [2006] No. 7)*
- *Renewable energy surcharge level regulation (NDRC Price [2006] No. 28-33)*
- *Provisional regulation on renewable energy surcharge balancing (NDRC Price [2007] No. 44)*
- *Provisional Administrative Measures on Earmarked Fund for Renewable Energy Development (MoF Economic and Construction [2006] No. 237)*

*These should be discussed in brief. Please note Appendix 2, which is intended to provide a brief overview of each of the national regulations, policies and technical standards in this study.*

[Relevant policies and guidance to be inserted, if applicable.]

## C. Selected provincial examples

[Selected provincial examples to be inserted.] *Only Guangdong can make price for power and other regions are without this power.*

## D. Outstanding issues

### JUNE 2007 RECOMMENDATION

- The details of how the cost-sharing revenue will be divided among the 31 provinces, and how the additional costs will be borne by energy utilities, need to be clarified.

[insert text]

### Key issues of which potential investors should be aware

Investors should understand that the power price will be made by NDRC no matter with or without tendering. However, Guangdong has the right to make power price by themselves.

## 3.4 Connecting renewable energy to the grid

### A. Introduction

*[There is no need to provide a detailed introduction here. A brief explanation, together with an outline of the relevant primary law will suffice here.]*

#### Relevant provisions of the Renewable Energy Law

**Article 21**—Grid connection expenses paid by grid enterprises for the purchase of renewable power and other reasonable expenses may be included into the grid enterprise power transmission cost and retrieved from the selling price.

**Article 29**—If the power grid enterprises breach Article 14 hereof and fail to purchase renewable power in full, which results in economic loss to the renewable power generation enterprises, such power grid enterprises shall be liable for compensation, and the national power supervisory institutions shall order them to make correction within a stipulated period of time; in case of refusal to make correction, a fine of less than the economic loss of the renewable power generation enterprises shall be imposed.

**Article 30**—In case that enterprises of natural gas pipeline network and heat pipeline network breach paragraph 2 of Article 16 hereof and do not permit the connection of natural gas and heat that conform to the grid connection technical standard into the network, which results in economic loss to the gas and heat production enterprises, relevant enterprises shall be liable for compensation, and energy authorities of the people's government at the provincial level shall order them to make correction within a stipulated period of time; in case of refusal to make correction, a fine of less than said economic loss shall be imposed against them.]

### B. National regulations, policies and technical standards

#### Regulations

*[We understand that, in addition to Regulation on the administration of power generation from renewable energy (NDRC Price [2006] No.7), a new regulation has come into force: 'Measures for the Administration of Power Grid Enterprises' Full Acquisition of Renewable Energy Power'. We understand that this instrument means that renewable energies will enjoy priority scheduling in grid network access. This development should be noted in a little more detail (as it post-dates the June 2007 Paper).]*

#### National policies and guidance

*[Relevant policies and guidance to be inserted. We note that certain technical standards may be applicable in this section, e.g. Technical code for wind farms to connect to the grid; Technical code for the geothermal power plants to connect to the grid; Technical code for the PV power plants to connect to the grid. Given that these are technology specific, it will be necessary to consider each technology in turn (and to highlight those technologies for which technical standards are still absent).]*

### C. Selected provincial examples

*[Selected provincial examples to be inserted.]*

## D. Outstanding issues

### JUNE 2007 RECOMMENDATION

- Favourable grid connection and pricing regulations for small hydropower projects, which are usually rejected by power grids, need to be developed.

[insert text]

### Key issues of which potential investors should be aware

[to be inserted] see above.

## 3.5 Regulatory approvals

### A. Introduction

*[As with the June 2007 Paper, the purpose of this section is to consider how the approval process for renewable energy projects ties in with the foreign investment approvals process.]*

#### Relevant provisions of the Renewable Energy Law

**Article 2**—Renewable energy in this law refers to non-fossil energy of wind energy, solar energy, water energy, biomass energy, geothermal energy, and ocean energy, etc.

Application of this Law in hydropower shall be regulated by energy authorities of the State Council and approved by the State Council.

This Law does not apply to the direct burning of straw, firewood etc. on low-efficiency stove.

**Article 13**—The Government encourages and supports various types of grid-connected renewable power generation.

For the construction of renewable energy power generation projects, administrative permits shall be obtained or filing shall be made in accordance with the law and regulations of the State Council.

In the construction of renewable power generation projects, if there is more than one applicant for project license, the licensee shall be determined through a tender.

### B. National regulations, policies and technical standards

*[The 2007 catalogue for the Guidance of Foreign Investment Industries, which replaces the 2004 should (along with any other relevant regulations) be considered here.] a new regulation has made by MOF in September 2008, Ma Please has the key points for this.*

### C. Selected provincial examples

*[Selected provincial examples to be inserted.] NO special issue for provinces.*

## D. Outstanding issues

### JUNE 2007 RECOMMENDATIONS

## JUNE 2007 RECOMMENDATIONS

- Clarify the responsibilities of each level of government in the approvals process.
- Clarify and streamline the overlap between the renewable energy approvals process and the foreign investment approvals process.

[insert text]

**Key issues of which potential investors should be aware**

No more, Just be careful for the new regulation of MOF in September 2008.

## 3.6 Investment incentives

### A. Introduction

*[The June 2007 Paper (see Chapter 2.9) suggested that investment incentives was fairly inchoate, referring to future regulations that the Chinese Government might adopt. This update, should therefore concentrate on what concrete measures have been put in place since the Renewable Energy Law came into force.]*

#### Relevant provisions of the Renewable Energy Law

**Article 24**—The Government budget establishes renewable energy development fund to support the following:

- (1) Scientific and technological research, standard establishment and pilot project for the development and utilization of renewable energy;
- (2) Construction of renewable energy projects for domestic use in rural and pasturing areas;
- (3) Construction of independent renewable power systems in remote areas and islands;
- (4) Surveys, assessments of renewable energy resources, and the construction of relevant information systems;
- (5) Localized production of the equipment for the development and utilization of renewable energy.

**Article 25**—Financial institutions may offer preferential loan with financial interest subsidy to renewable energy development and utilization projects that are listed in the national renewable energy industrial development guidance catalogue and conform to the conditions for granting loans.

**Article 26**—The Government grants tax benefits to projects listed in the renewable energy industrial development guidance catalogue, and specific methods are to be prepared by the State Council.

### B. National regulations, policies and technical standards

*[The 2007 catalogue for the Guidance of Foreign Investment Industries, which replaces the 2004 should (along with any other relevant regulations) be considered here.]*

*[Relevant policies and guidance to be inserted, if applicable.] the new regulation of MOF.*

### C. Selected provincial examples

*[Selected provincial examples to be inserted.] No one*

**D. Outstanding issues**

JUNE 2007 RECOMMENDATIONS
<ul style="list-style-type: none"> <li>Clarify the details of financial incentive programs for solar photovoltaic power generation and biofuels, as well as the tax and loan arrangements.</li> </ul>
<ul style="list-style-type: none"> <li>Consider international best practice for effective tax incentives, loans and funding for renewable energy projects, including tying assistance to technical standards and project lifetime output goals.</li> </ul>
<ul style="list-style-type: none"> <li>Ensure that the process for applying for and the criteria for receiving such incentives are clear and easily available, in several languages.</li> </ul>
<ul style="list-style-type: none"> <li>Strengthen enforcement of intellectual property rights at the provincial/local government level.</li> </ul>
<ul style="list-style-type: none"> <li>Develop a code of practice for renewable energy technology transfer.</li> </ul>
<ul style="list-style-type: none"> <li>Clarify the foreign ownership restrictions for renewable energy projects conducted under the CDM.</li> </ul>
<ul style="list-style-type: none"> <li>Clarify ownership rights to renewable energy facilities (e.g. wind turbines) built on land that is the subject of a government concession.</li> </ul>
<ul style="list-style-type: none"> <li>Clarify who is responsible for decommissioning facilities at the end of the project life.</li> </ul>

[insert text]

**Key issues of which potential investors should be aware**

[to be inserted] No one: special without the VAT deduction for international investors, which will made the financial situation worse.

Comment [BMCK2]: CREIA to clarify

**3.7 Technical standards**

**A. Introduction**

*[The June 2007 Paper stated (in Chapter 3.2) that "a series of technical standards are expected to be released by various Government agencies in 2007." Highlight the standards that were in place when the June 2007 Paper was adopted and also highlight those that have been put in place since its publication.]*

**Relevant provisions of the Renewable Energy Law**

**Article 11**—Standardization authorities of the State Council shall set and publicize technical standard for renewable energy electric power and the technical standards for relevant renewable technology and products for which technical requirements need to be standardized at the national level.

For those technical requirements not dealt with in the national standard in the previous paragraph, relevant authorities of the State Council may establish relevant industrial standard, which shall be reported to the standardization authorities of the State Council for filing.

**Article 17**—The Government encourages workplaces and individuals in the installation and use of solar energy utilization systems of solar energy water-heating system, solar energy heating and cooling system and solar photovoltaic system, etc.

Construction authorities of the State Council shall cooperate with relevant authorities of the State Council in establishing technical economic policies and technical standards with regard to the

combination of solar energy utilization system and construction.

Real estate development enterprises shall, on the basis of the technical standards in the previous paragraph, provide necessary conditions for the utilization of solar energy in the design and construction of buildings.

For buildings already built, residents may, on the condition that its quality and safety is not affected, install solar energy utilization system that conform to technical standards and product standards, unless agreement has been otherwise reached between relevant parties.

**B. National technical standards**

[As background, the standards referred to in the June 2007 Paper were:

- *Wind power generation part I: general technical qualification*
- *Wind power generation part II: general testing approach*
- *Technical code for wind farms to connect to the grid*
- *Technical code for the geothermal power plants to connect to the grid*
- *Technical code for solar photovoltaic power plants to connect to the grid*

As noted elsewhere, discussion of these standards should be brief and relate to key developments since the introduction of the Renewable Energy Law. The reason for this is that an overview of each technical standard should be included in Appendix 2.] all of them are under the development.

**C. Selected provincial examples**

[Selected provincial examples to be inserted.] Only Yunnan and Hainan have developed standards for solar building integration.

**D. Outstanding issues**

JUNE 2007 RECOMMENDATIONS
<ul style="list-style-type: none"> <li>▪ Design and implement large-scale efficient transmission networks to deliver energy from renewable sources around China and allow the grid to support large-scale renewable energy projects.</li> </ul>
<ul style="list-style-type: none"> <li>▪ Implement further technical standards to build China's renewable energy in light of its limited experience (e.g. standards for the bio-fuel productions to allow for larger scale application). Australian technical bodies and consultants may be able to assist with developing appropriate standards.</li> </ul>
<ul style="list-style-type: none"> <li>▪ Require manufacturing and consultant companies to provide warranties to government authorities that products meet technical standards, and require independent verification of estimates and designs, to put commercial pressure on companies to deliver high-quality products.</li> </ul>
<ul style="list-style-type: none"> <li>▪ Environmental protection regulations for large hydropower projects need to be clarified.</li> </ul>

[insert text]

**Key issues of which potential investors should be aware**

[to be inserted] No one yet.

## 3.8 Resource data

### A. Introduction

*[As noted in Chapter 3.2 of the June 2007 Paper, electricity generation from renewable sources can be very sensitive to small changes in the renewable resource and investment decisions are made based on available resource data, whether that be wind, sunlight, water flow or available biomass fuel. The June 2007 Paper did not consider resource data extensively, so it would be useful to build on the topic in this paper.]*

#### Relevant provisions of the Renewable Energy Law

**Article 6**—Energy authorities of the State Council are responsible for organizing and coordinating national surveys and management of renewable energy resources, and work with related departments to establish technical regulations for resource surveys.

Relevant departments of the State Council, within their respective authorities, are responsible for related renewable energy resource surveys. The survey results will be summarized by the energy authorities in the State Council.

The result of the survey of renewable energy shall be released to the public, with the exception of confidential contents as stipulated by the Government.

**Article 24**—The Government budget establishes renewable energy development fund to support the following:

- (1) Scientific and technological research, standard establishment and pilot project for the development and utilization of renewable energy;
- (2) Construction of renewable energy projects for domestic use in rural and pasturing areas;
- (3) Construction of independent renewable power systems in remote areas and islands;
- (4) Surveys, assessments of renewable energy resources, and the construction of relevant information systems;
- (5) Localized production of the equipment for the development and utilization of renewable energy.

### B. National regulations, policies and technical standards

*[Relevant regulations, policies and guidance to be inserted, if applicable.]*

### C. Selected provincial examples

*[Selected provincial examples to be inserted.]*

### D. Outstanding issues

#### JUNE 2007 RECOMMENDATION

- Implement a national approach to resource assessment such as wind mapping. Conduct training in resource assessment and make methods and results available to developers.

Key issues of which potential investors should be aware

[to be inserted]

### 3.9 System design and support issues

#### A. Introduction

[In a sense this section catches the recommendations of the June 2007 Paper that do not fit elsewhere. Therefore, it may not be possible to conform the structure of the section to the structure set out below. However, for consistency, it should conform as far as possible.] Nothing more happened yet.

#### Relevant provision of the Renewable Energy Law

**Article 12**—The government lists scientific and technical research in the development and utilization of, and the industrialized development of, renewable energy, as the preferential area for hi-tech development and hi-tech industrial development in the national program, and allocates funding for the scientific and technical research, application demonstration and industrialized development of the development and utilization of renewable energy so as to promote technical advancement in the development and utilization of renewable energy, reduce the production cost of renewable energy products and improve the quality of products.

Education authorities of the State Council shall incorporate the knowledge and technology on renewable energy into general and occupational education curricula.

#### B. National regulations, policies and technical standards

[Relevant regulations, policies and guidance to be inserted, if applicable.]

#### C. Selected provincial examples

[Selected provincial examples to be inserted.]

#### D. Outstanding issues

JUNE 2007 RECOMMENDATIONS
<ul style="list-style-type: none"> <li>Establish a mechanism to enable sharing of experience and knowledge between local and provincial government across the country to maximise learning and avoid repeating mistakes.</li> </ul>
<ul style="list-style-type: none"> <li>Implement training, education and outreach programs at a provincial and local level, targeting government officers, power utilities, investors and banks, to ensure the Renewable Energy Law is adequately implemented. Australian Government and industry could assist in the implementation of these programs by sharing its experience in policy formulation and implementation, project financing and development, and other issues.</li> </ul>
<ul style="list-style-type: none"> <li>Monitor the effectiveness of existing regulations and revise them based on feedback from industry.</li> </ul>
<ul style="list-style-type: none"> <li>Establish a dedicated renewable energy office in each province to share information with the NDRC, with annual reporting requirements.</li> </ul>

**Key issues of which potential investors should be aware**  
*[to be inserted]*

## 4. Key Issues with wind and solar power

### General Drafting Note

*The purpose of section 4 of the paper is to present potential investors with a brief overview of the state of the Chinese Renewable Energy Market, together with potential issues that they may face when investing in that technology.*

*It is not intended to be an exhaustive account of the types of technology currently used in China or a detailed analysis of the development of the renewable energy industry. Rather, to the extent that it is possible, details about the potential capacity of the relevant market and major projects that have been implemented should be kept as brief as possible.*

*It is intended to build on section 3, by drawing on the legal/policy difficulties highlighted in that section and by adding any technical issues that may present problems.*

*In other words, an investor should be able to tell at a glance (from looking at sub-section (c) for each technology) what legal and market difficulties he or she might face when investing in any given type of renewable energy technology in China.*

### 4.1 Wind

#### A. Capacity

##### POTENTIAL AND INSTALLED WIND POWER CAPACITY IN PROVINCES

PROVINCE	POTENTIAL (IN GW)	INSTALLED (IN MW)
Beijing Municipality	N/a	49.5
Tianjin Municipality	N/a	1.5
Hebei Province	77.9	491.45
Shanxi Province	49.3	5
Inner Mongolia Aut. Region	786.9	1563.19
Liaoning Province	77.2	507.81
Jilin Province	81.2	612.26
Heilongjiang Province	219.5	405.25
Shanghai Municipality	N/a	28.9
Jiangsu Province	30.3	293.75
Zhejiang Province	20.8	47.35
Fujian Province	17.5	237.75
Shandong Province	50.1	350.2
Henan Province	46.8	3

PROVINCE	POTENTIAL (IN GW)	INSTALLED (IN MW)
Hubei Province	24.6	13.6
Hunan Province	31.4	1.65
Guangdong Province	24.8	287.39
Hainan Province	8.2	8.7
Gansu Province	145.6	338.3
Ningxia Aut. Region	18.9	343.2
Xinjiang Aut. Region	437.3	299.31
Hong Kong	N/a	0.8
<b>Total</b>		<b>3236</b>

**B. Recent developments and major projects**

**Drafting Note**  
*The purpose of this sub-section is give a flavour of the types of projects that have been developed to date. Each case study should be brief and set out (1) a brief description of the project, (2) the project developer, and (3) the gestation period of the project.*

**Case studies**

- one of the most important wind farmer develop area is the Inner Mongolia, which the resource takes about 40% of the national total and instated wind power reached about 1563 MW by the end of 2007 and it estimated by 2020, there is about 30 to 40 GW wind farmer will be installed in the region and several GW level wind farms have been identified in the region.
- The second large potential in the North-east three provinces, where the resources ranked the third in China, just behead of Inner Mongolia and Xinjiang, the total installation of WTG was above 1524 MW and the potential for 2020 will be 10 to 15 GW. And three GW level wind farmers have been identified in the region.
- The third large area in Gansu, where is the resource is about 145 GW and the total installed wind power was 338 MW and the province tried to develop a 20 GW wind farms by 2020 and a 5 GW level project has been approval and among then 3.6 GW has pass the bidding tender procedures already.
- The forth one will be Jiang and they also want to build a 20 GW wind farms by 2020,even now it is only about 294 MW be installed by end of 2007.

**C. Tariffs for wind power**

Wind power prices are intended to be set by the government in the form of a feed-in tariff, as noted in section 3.2. In principle, this regulation should apply to all the projects. However, there is a vast difference in wind resources and individual projects across China. In practice, the regulation is only applied to national concession projects. After the release of the NDRC Price Measure, several price establishing methods, pertaining to non-concession projects, were approved in 2006.

- The first category: projects following the concession. Around the central government concession projects, there are regions having similar terrain and resource conditions. Although they are not part of the concession projects, if other bidders enterprises promise to accept the price of the concession project, and then they can obtain the development right of these following projects from the NDRC's authorization. There are proceeding examples in Jiangsu, Inner Mongolia, Jilin and Gansu provinces. In Jiangsu Province, there is a series of projects approved by this method. If the developers promise to accept the online reference price level established by concession projects, the development right of the projects can be obtain from local government consultation;
- The second category: Some provinces are organizing local tender, wind power tariff is also established through tender process, such as Fujian, Inner Mongolia and Shandong and Hebei provinces. Through local tender, a number of projects have been approved, and the local tender price level is generally higher than the national tender ones, about 5-10 cents per kWh. The local tender generally is organized by provincial Development and Reform Committee or county government organizations.
- The third category: the price approved by the local government. Developers need to lobby the government departments in charge of the project for the project approval and the pricing approval. In Liaoning, Shandong, Heilongjiang, and Fujian Provinces, there is absence of a concession or the tender price, which can be used as a reference to wind power projects. Most of them adopted such pricing method. Although there is national concession tender price as a reference in Jilin and Inner Mongolia, some projects are also approved by the local government, some of the projects approved by the tariff, and some project's tariff are approved by the central government.
- The fourth category: in Guangdong province, a unified "Feed-in tariff" is implemented on the wind power projects. In addition to national wind power concession projects, since 2005 the tariff of new wind power projects is fixed at 0.528 Yuan per kWh, tax included and it was changed to 0.68 Yuan by March of 2008.

Evidently, the national concession projects are comparatively larger ones, and the government is providing lots of favourite terms. But the concession tender price is only applicable to these big projects; at most it can affect the tariffs of surrounding wind power projects. There is little reference significance to other projects.

Apart from Guangdong province's uniform tariff, the other provinces have no specifically identified tariff. The tariff should be established in one of the above ways.

When approving a general power project, the National Development and Reform Commission and the local Bureau of Commodity Prices generally lay out an intentional suggestion toward the tariff. When the project construction is completed and about to begin power generating, the tariff could be confirmed according to the actual construction cost.

Currently, government departments, in charging the approval of prices, are Pricing department of the NDRC, and the provincial Bureau of Commodity Prices. Usually, project owners apply the documents of project, including tariff, to the provincial department in charge of energy (generally, the transportation and energy division of the provincial development and reform committee). The department should countersign the approval with the Bureau of Commodity Prices, and report it to the NDRC for the record.

**Comment [a3]:**  
 Which are the differences between them? Which are the competences of each one?  
 Usually, the price which given by local price bureau will be slight higher than the central. However, the central price bureau can change the decision b-made by the local bureaus. For example, Tasmania Hydro get the price of 0.63 Yuan/kWh form the local and the final approval by NDRC was 0.61 Yuan/kWh.

The wind power pricing system is very complicated. However, in summary there are only two channels to establish the wind power price:

- Bidding price, currently, 4 phases with total 2400 MW with about 15 projects, which is so called as wind concessional projects, and the price from 0.38 Yuan/kWh to about 0.519 Yuan/kWh and the average price of bidding projects is 0.471 Yuan/kWh with 8.5% of valued added tax (VAT) by end of 2007.
- The rest is approval price adopted by local price bureaus in provincial level and the price is mainly based on the wind resource and referring to the bidding project price. The local approval is quite different with lowest of 0.42 Yuan/kWh and the highest one is 0.78 Yuan/kWh and the average price is about 0.59 Yuan/kWh.

The wind price includes 8.5% of VAT. All the local approval prices are higher than the National Bidding program, with an average difference of 0.12 Yuan/kWh.

The highest price is paid in Shandong, which pays approximately 0.681 Yuan/kWh on average, and lowest price is paid in Jiangsu, since there all the prices come from the bidding procedure. The current wind power prices in various provinces of China are shown in the tables in Appendix 4,

In 2007 and 2008, the Pricing Division of the NDRC has approved prices for more than 50 wind power projects, and the prices of different projects in one province are the same. They are listed below:

**APPROVED PRICES FOR WIND POWER PROJECTS**

PROVINCES	PRICE (YUAN/KWH)
Inner Mongolia	0.52/0.54
Hebei	0.54/0.61
Jilin	0.61
Gansu	0.542
Xingjiang	0.496
Shandong	0.61
Fujian	0.590

As for the difference between the approved tariffs with the preliminary opinion of the Pricing Bureau, the tariff is normally determined by discussion, therefore there is no big difference.

Currently, foreign investors usually adopted joint venture method to enter the wind power development, there are domestic partners. The approved tariff is the same, and no difference has happened with domestic and foreign developers.

Especially since 2007, many provinces approved a unified tariff within the individual province. In particular, the Pricing Department of the NDRC approved the tariffs for more than 50 wind power projects. Each province has a uniform price, and the approved tariff to the province can be used as standard reference. Gradually, one uniform price for each province could be the trend for the approving of wind power project.

It is only assumption by the consultant. The good news are:

- NDRC made approval price for more than 50 project and made one price one region (two prices for Heibei and Inner Mongolia);
- The fifth phase of the tendering will adopt our suggestion: delete one highest and one lowest and the nearest one to middle one will be the winner of the bidding.

The tariff determined either by concession or approval will be applied for 30,000 hours. This one only for all the wind projects not applied for coal power, coal-fired power price will be use a standard price in each region, which listed by NDRC every year and it will be jested based coal price, which so called as power price connected with coal price.

**D. Outstanding issues**

**Drafting Note**

*The purpose of this sub-section is draw on law and policy considered in section 3 and to overlay that on to the state of the market, to give a potential investor an overall picture of how easy (or otherwise) it would be to invest in the particular technology.*

*In other words, an investor should be able to tell at a glance (from looking at the text in the blue box) what legal and also what market difficulties he or she might face when investing in a renewable energy project in China.*

**Key issues of which potential investors should be aware**

The four regions will be the most important areas for wind farm development. However, other areas still have potential, such as Xijiang, which is the second largest wind resource region in China. In the eastern part of China, Fujian and Guangdong will be some of the best regions for wind power.

The current government plans that wind turbine installation by 2010 and 2020 will be 10 and 30 GW. However, the total installation will most like to be 25 GW and 100 GW by 2010 and 2020 respectively.

**4.2 Solar**

**A. Capacity**

*[We note that there are a number of different forms of this technology. If it is possible to set out in brief figures for each of those types then please do so. If it is not, then please provide an overview of the state of the market (see, by way of illustration Example Table C below.)]*

Now information like wind.

**B. Recent developments and major projects**

**Drafting Note**

*The purpose of this sub-section is give a flavour of the types of projects that have been developed to date. Each case study should be brief and set out (1) a brief description of the project, (2) the project developer, and (3) the gestation period of the project.*

**Case studies**

- Commencement of Northern China's largest solar illuminated ecological district in the Shandong Province. It is rumor.
- NDRC issued a notice to west 8 provinces, asked to develop pre-feasibility study for 5 MW solar PV projects and make them ready for tendering. However, there is no further information available yet.

### C. Outstanding issues

**Key issues of which potential investors should be aware**

*[to be inserted] solar PV market is still sleep in China.*

## Appendix 1 – Abbreviations

ABBREVIATION	DEFINITION
DRC	Development and Reform Commission, eg of a province
NDRC	National Development and Reform Commission of China
NDRC Price Measure	Provisional Administrative Measures on Pricing and Cost Sharing for Renewable Energy Power Generation (NDRC Price [2006] No.7)
RE Law Assist	<b>insert</b>
State Council	National council led by the Chinese Premier, responsible for exercising all powers (unless delegated to provincial governments). The State Council enacts administrative rules.

## Appendix 2 – Overview of relevant national implementing measures

this table can not make clear show for ever thing.

AREA	SECTIONS OF RENEWABLE ENERGY LAW	REGULATIONS, POLICIES, GUIDANCE AND TECHNICAL STANDARDS
<b>Targets</b>	4, 7, 9	Medium and Long-Term Development Plan for Renewable Energy in China
<b>Price Setting</b>	19, 22, 23	Provisional administrative measures on pricing and cost sharing for renewable energy power generation (NDRC Price [2006] No. 7)
<b>Cost Sharing</b>	20, 21	Provisional administrative measures on pricing and cost sharing for renewable energy power generation (NDRC Price [2006] No. 7) Renewable energy surcharge level regulation (NDRC Price [2006] No. 28-33) Provisional regulation on renewable energy surcharge balancing (NDRC Price [2007] No. 44)
<b>Grid Connections</b>	21, 29, 30	[ ]
<b>Approvals</b>	2, 13	Guiding catalogue for development of the renewable energy industry (NDRC Energy [2005] No. 2517)
<b>Investment Incentives</b>	24, 25, 26	Provisional administrative measures on the Renewable Energy Development Fund (MoF Economic and Construction [2006] No. 237)
<b>Technical Standards</b>	11, 17	[ ]
<b>Resource Data</b>	6, 24	[ ]
<b>System Design and Support Issues</b>	12	[ ]

## Appendix 3 – Descriptions of relevant national regulations, policies and technical standards

### 1. Overview of Regulations

**Drafting note**

The following tables should provide an overview of the what each regulation, policy and technical standard does.

In relation to regulations, we have used three types of status: (1) "approved" (2) "provisional but in force" and (3) "pending" (which we intend to mean that the relevant regulation is in draft form but is not yet in force).

TITLE	STATUS	DATE	PUBLISHED BY / REFERENCE	TYPE OF RE	DESCRIPTION
<b>Provisional administrative measures on pricing and cost sharing for renewable energy power generation</b>	Provisional	2006	NDRC Price [2006] No.7	All	Sets out the principles for renewable energy power pricing and cost sharing. In particular, it identifies the level of wind and biomass power pricing and clarifies all costs related to renewable energy power that will be covered by the renewable energy surcharge.
<b>Renewable energy surcharge level regulation</b>	Approved	2006	NDRC Price [2006] No.28-33	All	Establishes the tax-exempt renewable energy surcharge (¥0.001 per kWh) payable by end users of electricity. This cost sharing arrangement mandates that end users pay a proportion of the higher cost of providing renewable energy, as well as the cost of connecting renewable energy facilities to the grid.
<b>Provisional regulation on renewable energy surcharge balancing</b>	Provisional	2007	NDRC Price [2007] No.44	All	Identifies the procedure for provincial power utilities to collect the renewable energy surcharge, the methodology for allocating this revenue amongst the provinces, and the role of the monitoring body in this process.
<b>Regulation on the administration of power generation from renewable energy</b>	Approved	2006	NDRC Energy [2006] No.13	All	Sets out approval procedures for renewable energy projects and further identifies the responsibilities of utilities and power generators. Provides that utilities are obliged to allow renewable energy facilities to connect to the grid.
<b>Guiding catalogue for the renewable energy industry development</b>	Approved	2005	NDRC Energy [2005] No.2517	All	Identifies the renewable energy technologies that will be supported by the government and identifies the economic policy instruments that will apply to these.

TITLE	STATUS	DATE	PUBLISHED BY / REFERENCE	TYPE OF RE	DESCRIPTION
<b>Provisional administrative measures on the renewable energy development fund</b>	Provisional	2006	MoF Economic and Construction [2006] No.237	All	Sets out the criteria for the use of the Renewable Energy Development Fund, identifies "priority areas", and provides application and approval procedures.
<b>Regulation governing the use of the renewable energy development fund to promote renewable energy integration in buildings</b>	Approved	2006	MoF and MoC [2006] No. 460	All	Together with the 'Notice on the approach to appraisalment of pilot projects for renewable energy integration in buildings', sets out how the Renewable Energy Development Fund will be used to promote the integration of renewable energy in buildings, the application and approval procedures and the criteria for project selection.
<b>Regulation on the management of bio-ethanol projects</b>	Approved	2006	MOF Construction [2006] No. 460	Biofuel	Sets out the policy for bio-ethanol development, imposes stricter market-entrance standards, project management and supervision requirements, and streamlines the administration system
<b>Regulation of the construction and management of wind farms</b>	Approved	2006	NDRC Energy [2006] No. 1204	Wind	Obliges local government authorities to develop local wind energy development plans (for facilities smaller than 50MW) according to wind resource availability. The wind tariff is still determined by the State Council through a tender process.
<b>Medium and long-term development plan for renewable energy in china</b>	Approved	2007	State Council [September 2007] [Reference ("Ref")]. Ma, please check with the English version of the plan	All	Set up a target for 2010 and 2020, which is 10 and 15% of renewable energy share in total energy use and ask RPS for grid and large coal fire power producers. The percentage of electric power generation from non-hydropower renewable energy in total grid power output in regions covered by major grids will top 1.5% and 4% by 2010 and 2020, respectively. Meanwhile, investors with a total equity generating capacity of over 5 million KW will be asked to assume an obligation to invest in renewable energy electric power generation projects. Total installed capacity of electric power generation from non-hydropower renewable energy that they hold shall account for 3% and 6% of their total equity installed generating capacity by 2010 and 2020, respectively.
<b>Measures on supervision and administration of grid enterprises in the purchase of renewable energy power</b>	Approved	2007	SERC [2007] No. 25	All	This regulation requires the national grid authority and national standards authority to draft grid connection and power purchase standards to ensure the safety of the grid when it receives electricity from renewable energy sources.
<b>Rural energy development plan</b>	Pending	■	■	All	This regulation will require the Ministry of Agriculture to draft a rural energy plan, covering renewable and conventional energy use and energy efficiency measures in rural areas.

**2. Overview of Policy Guidance**

TITLE	DATE	PUBLISHED BY / REFERENCE	TYPE OF RE	DESCRIPTION
Opinion on the use of the renewable energy development fund to promote the wind industry	[•]	NDRC & MoF [Date] [Ref]	Wind	[•]
Notice to promote the development of the biofuel industry through support for project construction	[•]	NDRC & MoF [Date] [Ref]	Biofuel	[•]
Notice on appraisal approach on pilot projects of renewable energy applied buildings	2006	MoF and MoC, 2006 [Ref]	All	[•]
Opinion on fiscal supporting measures to promote bio-energy and bio-chemical industry development	[•]	MoF [Date] [Ref]	Biofuel / Biomass	[•]
Notice to strengthen solar water heating system utilization	2007	NDRC & MoC [2007] [Ref]	Solar	[•]
Subsidy for renewable energy electricity price and quota trade	2007	[Publishing entity] [2007] [Ref]	All	[•]

## Appendix 4 – Wind power tariffs

### APPROVED PROJECTS AND TARIFFS (BEFORE 2006)

PROJECTS APPROVED	PRICE (AVERAGE TARIFF IN THE OPERATION PERIOD) YUAN/KWH, INCL TAX
Zhurihe, Inner Mongolia	0.5918
Huitengxile, Inner Mongolia	0.5918
Shangdu, Inner Mongolia	0.5918
Xilinhaote, Inner Mongolia	0.6291
Dale, Inner Mongolia	0.6574
Zhangbei, Hebei	0.984
Factory No.1 Dabancheng, Xinjiang	0.4
Factory No. 2, Dabancheng, Xinjiang	0.66
Donggang, Liaoning	0.9154
Dalian Hengshan, Liaoning	0.9
Cangnan, Zhejiang	1.2
Hainan Dongfang	0.56
Guangdong Nan'ao	0.74
Guangdong Nan'ao Zhenneng	0.62
Guangdong Nan'ao Dannan	0.46
Fujian Dongshang Aoziaishan	0.46
Gansu Yumen	0.73
Jilin Tongyu	0.9
Shanghai Chongming	0.773

Source:

Comment [BMCK4]: CREIA to provide sources for all tables

### PRICE OF TENDERED WIND POWER PROJECTS

PROJECTS	PRICE
Jiangsu Rudong	0.4365
Rudong Phase II	0.519
Jiangsu Dongtai	0.4877
Jiangsu Dafeng	0.4877
Guangdong Huilai	0.5013
Jilin Tongyu	0.509
Gansu Anxi	0.4616
Inner Mongolia Huitengliang	0.4058

PROJECTS	PRICE
Inner Mongolia Baotou Bayin	0.4656
Inner Mongolia Huitengxile	0.382
Shandong Jimo	0.6
Zhangbei Danjinghe	0.5006

#### CONCESSION TARIFF (2006, YUAN/KWH)

LOCATION	WITHOUT VAT	WITH VAT (8.5%)
Jiangsu Rudong, Huarui Co., Ltd	0.402	0.437
Guangdong Shbeishan, Yuedian, Group Co., Ltd	0.462	0.501
Inner Mongolia, Huitengxile, Beijing International Power New Energy Co.	0.352	0.382
Jinlin Tongyu, Longyuan Power Group Co.,	0.470	0.510
Jilin baicheng, Huaneng	0.470	0.510
Jiangsu Rudong, Longyuan	0.478	0.519
Jiansu Dongtai, Huadian International <sup>1</sup>	0.449	0.487
Gansu Anxi, Huanghe Power	0.425	0.462
Inner Mongolia, Huitengliang, Guangdong Nuclear	0.374	0.406
Inner Mongolia, Baotou Bayin, Longyuan	0.429	0.466
Hebei Danjinghe, China Energy conservation	0.461	0.501
<b>Average</b>	<b>0.434</b>	<b>0.471</b>

Comment [BMCK5]: CREIA to explain difference between this table and the table above

#### WIND POWER PRICE BY REGION (2006, YUAN/KWH)

REGION	PROJECT	WITHOUT VAT	WITH VAT (8.5%)
Shandong	Qixia 49.5MW	0.719	0.780
	Rongcheng 49.5MW	0.700	0.760
	Laizhou 49.5 MW	0.599	0.650
	Zhanhua 49.5	0.618	0.670
	Hekou 49.5 MW	0.645	0.700
	Dawang 49.5 MW	0.487	0.529
	<b>Average</b>	<b>0.628</b>	<b>0.681</b>
Inner Mongolia	Chifeng Saihanba West 30.6 MW	0.507	0.550
	Huitengxile Windfarm Project	0.461	0.500
	Huitengliang 49.5MW	0.525	0.570
	Chifeng Dongshan 49.3MW	0.502	0.545
	Saihanba East 45.05 MW	0.507	0.550

REGION	PROJECT	WITHOUT VAT	WITH VAT (8.5%)
	Saihanba North 45.05 MW	0.507	0.550
	<b>Average</b>	<b>0.502</b>	<b>0.544</b>
Jiangsu (bid prices)	Rudong Huangang 200 MW	0.478	0.519
	Dongtai 200 MW	0.449	0.487
	Jiangsu dongtai 200 MW	0.449	0.487
	Jiangsu rudong 100 MW	0.402	0.437
	other 4 projects with 200 MW each	0.449	0.487
	<b>Average</b>	<b>0.445</b>	<b>0.483</b>
Fujian	Dongshan Wujiaboy 30MW Wind Power Project	0.599	0.650
	Zhangpu Liuaio 30.6 MW Wind Power Project	0.496	0.538
	<b>Average</b>	<b>0.548</b>	<b>0.594</b>
Ningxia	Helanshan Wind-farm Project 49.5 MW	0.524	0.568
	Ningxia Tianjing 50.25MW	0.470	0.510
	Tianjing Shenzhou 30.6MW	0.516	0.560
	<b>Average</b>	<b>0.503</b>	<b>0.546</b>
Hebei	Chengde Songshan 49.5 MW	0.553	0.600
	Zhangbei Manjing 49.5MW	0.602	0.653
	Kangbao Wolongtushan 30 MW	0.553	0.600
	Zhangbei Mijiagou 49.5 MW	0.553	0.600
	Hebei Shangyi Manjing East 49.4 MW	0.553	0.600
	<b>Average</b>	<b>0.563</b>	<b>0.611</b>
Xinjiang	Sanchang First Phase 34.5 MW	0.433	0.470
	Tuoli Wind-Farm 30 MW	0.399	0.433
	<b>Average</b>	<b>0.416</b>	<b>0.452</b>
Heilongjiang	Huafu Muling 49.5 MW	0.607	0.659
	Yichun Erduoyan 28.05 MW	0.612	0.664
	Yichun Daqingshan	0.612	0.664
	Liaoning Kangping 24.65MW	0.645	0.700
	<b>Average</b>	<b>0.619</b>	<b>0.672</b>
Liaoning	Changtu Windfarm Project	0.604	0.655
	Zhangwu 24.65MW	0.645	0.700
	<b>Average</b>	<b>0.624</b>	<b>0.678</b>

REGION	PROJECT	WITHOUT VAT	WITH VAT (8.5%)
Jilin	Taobei Huaneng 49.3MW	0.559	0.607
	Datang Shuangliao 49.5 MW	0.544	0.590
	Taobei Fuyu 49.5MW	0.512	0.556
	Changling Wind 24 MW	0.599	0.650
	Taonan 49.5 MW	0.546	0.592
	<b>Average</b>	<b>0.552</b>	<b>0.599</b>
Guangdong with fixed price		0.487	0.528
<b>Overall average</b>		<b>0.544</b>	<b>0.590</b>

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