

1. MAINLAND CHINA

1.1 Energy Policies and Actions

The current China's energy laws and legislative framework mainly include Coal Laws, Electricity Laws, Energy Conservation Laws, Renewable Energy Laws, and a series of administrative legislation, regulations and district energy legislation.¹ However, China has not yet has its foundational law in the energy field at the present stage.²

Coal Law was promulgated and implemented in 1996 which aims to (i) control the exploration and use of coal resources, (ii) regulate the production of coal and the relevant commercial activities, and (iii) enhance and insure the development of coal industry in China.³

Electricity Law was passed in 1995 which applies to all activities related to electricity construction, production, supply and use. This law aims to (i) protect and enhance the development of the national electricity business, (ii) uphold the legal rights for electricity stakeholders, executors and users, (iii) ensure the safety operation of electricity transmissions.⁴

Energy Conservation Law was promulgated in 1997 and implemented in 1998. The law aims to encourage energy conservation and energy efficiency in the community so as to insure the well-balanced development of the society, the economy and the environment. The energy in this law refers to coal, petroleum, natural gas, coal, liquefied petroleum gas, biomass and other renewable energy.⁵

In 2003, the Government began to set about formulating its Renewable Energy Law. This law, being implemented in January 2006, aims to (i) confirm the important role of renewable energy in China's national energy strategy, (ii) remove barriers to the development of the renewable energy market, (iii) create market space for renewable energy, (iv) set up a financial guarantee system for the development of renewable energy, and (v) create a social atmosphere conducive to renewable energy.⁶

Based on the existing legislation framework on energy sector in China, it is mainly concentrated to regulate certain energy aspect, e.g. coal, electricity, renewable energy, etc. Besides, the framework is not comprehensive enough to incorporate basic laws on energy strategies and political directions. To conclude, the existing energy legislations are lack of coordination and there is no relevant legislative framework to insure energy security and enhance international cooperation. In order to cope with the complicated and stressful energy problems, the Chinese Government has passed to draft "Energy

¹ Source at <u>www.news.cn</u>, http://news.xinhuanet.com/newscenter/2006-06/13/content_4690400.htm

² Referenced to the web for the Office of the National Energy Leading Group, http://www.chinaenergy.gov.cn/news.php?id=16290

³ Coal Law: http://www.gov.cn/ziliao/flfg/2005-08/05/content_20916.htm

⁴ Electricity Law: http://news.xinhuanet.com/legal/2003-01/22/content_701842.htm

⁵ Energy Conservation Law: http://www.serc.gov.cn/opencms/export/serc/laws/gjfg/news/document24.html

⁶ Renewable Energy Law: <u>http://www.gov.cn/ziliao/flfg/2005-06/21/content_8275.htm</u> & referenced to the Overview of Renewable Energy Development in China – 2006, Energy Bureau, Center for Renewable Energy Development, Energy Research Institute, National Development and Reform Commission, Chinese Renewable Energy Industries Association, page 7



Law" and this has regarded as one of the important regulatory issues. Through constructing a complete energy regulatory framework, it is expected to provide a basic and strong insurance and support for the implementation of energy strategies and policies, and aims to support the harmonious development of the society, the economy and the environment.

In early 2006, the drafting work for China's "Energy Law" was started officially, and the relevant departments such as Office of the National Energy Leading Group, Ministry of Regulations, Ministry of Finance, etc., are responsible for the implementation. At present, the basic framework for Energy Law in China has been formed.⁷ The Energy Law under drafting will cover the following items:

- Energy resource exploration and production
- Energy supply and services
- Energy utilisation and conservation
- Energy reserve and emergency uses
- Rural energy
- Environmental protection
- Research and development
- International cooperation and energy market supervision⁸

The bases of China energy policy are:

- (i) Energy savings: Under the 11th Five-year plan for China's national economy and society, it is targeted to reduce 20% of GDP in energy consumption by 2010. This can be achieved by promoting energy conservation and energy efficient uses, and providing effort to make China become a resource conservation society.
- (ii) Domestic Energy Development: For many years, the degree of self-supply of energy has maintained at above 90% in China. There is a huge potential for Chinese domestic energy supply. The coal resources are rich, and there is about 75% of electricity and water resources that have not yet been developed. Besides, the application of nuclear energy, wind energy, solar energy as well as biomass energy has just started. Fuels like ethyl alcohol, coal base energy, alcohol ether fuel and hydrogenation of coal have high potential for development.
- (iii) Diversified Energy Development: Effort will be provided to construct a coal-based and electricity-centered energy structure, and to broadly develop oil, gas and renewable energy. At the same time, it will continuously readjust the energy structure and increase the use of clean energy and renewable energy, so as to achieve the utilisation of renewable energy from the present 7% to about 16% in 2020.
- (iv) Environmental Protection: The on-going and future development of China's energy will stress on both economic benefits and environmental protection. This

⁷ Referenced to the web for the Office of the National Energy Leading Group, http://www.chinaenergy.gov.cn/news.php?id=17159

⁸ Referenced to the web for the Office of the National Energy Leading Group, http://www.chinaenergy.gov.cn/news.php?id=16290



can largely reduce the adverse environmental impacts caused by energy development, and can enhance sustainable development. China is making effort to reduce the total discharge of sulphur dioxide and other pollutants by 10% compared with that of 2005 by 2010.

(v) Reinforce Cooperation: The Chinese government participated in many multilateral cooperation in the field of energy, considered fully the complementarities of resources, economy and technology, and cooperated internationally in developing the energy sector.⁹

In June 2007, the Chinese government has announced its first National Action Plan¹⁰ to respond to climate change during a state council conference, though China was exempted to reduce carbon emissions under the present agreement of the Kyoto Protocol.¹¹ The action plan describes climate change effects and outlines policies and measures China will adopt. To cope with global warming, China had been taking a series of measures, including changing the economic growth pattern by adjusting economic structure and energy mix and controlling population growth. The measures include:

- Restructuring the economy, promoting technology advancement and improving energy efficiency
- Optimising energy mix by developing low-carbon and renewable energy
- Launching national wide tree-planting and afforestation campaign and enhancing ecology restoration and protection
- Effectively controlling the growth rate of population through family planning
- Strengthening laws and regulations, and policies and measures relevant to addressing climate change
- Further improving institutions and mechanisms
- Attaching great importance to climate change research and capacity building
- Strengthening education, training and public awareness on climate change¹²

The National Action Plan targets to (i) increase the proportion of electricity generation from renewable energy sources and from nuclear power, (ii) increase the efficiency of coal-fired power stations the use of cogeneration, and (iii) develop coal-bed and coal-mine methane.

The plan also states the work plan for energy conservation, including:

- increased use of renewable energy
- revised pricing for primary energy sources and electricity
- export restrictions on energy intensive and highly polluting products
- tax incentives for pollution-reduction projects.¹³

⁹ Referenced to the web for the Office of the National Energy Leading Group, http://www.chinaenergy.gov.cn/news.php?id=17159

¹⁰ Full text: http://news.xinhuanet.com/english/2007-06/04/content_6197309.htm

¹¹ Kyoto Protocol related contexts refer to http://en.wikipedia.org/wiki/Kyoto_Protocol#Australia

¹² Source from the Chinese Government Official Web, http://www.gov.cn/english/2007-06/02/content_633750.htm

¹³ Source: http://en.wikipedia.org/wiki/Energy_policy_of_China



The Chinese Government has also formulated its Medium and Long-term Energy Development Strategy and Plan to 2020, which includes the basic principles, strategic targets and relevant guarantee measures for renewable energy in China up until 2020. The plan calls for making use, by 2020, of most f the available resources for hydropower, solar thermal, geothermal and other renewable energies that are already competitive on the market. The Chinese Government has also undertaken a series of national activities and programmes in order to promote the development and utilisation of renewable energy. These include:

- Comprehensive Rural Energy Planning and Construction Programme including the promotion of energy efficient stoves, rural biogas digestors, fuel wood forests and solar energy
- Rural Electrification Programme including the promotion on the use of hydropower to achieve rural electrification
- Brightness Programme including the promotion of the use of PV modules and wind power systems to provide power for daily needs to populations without access to electricity
- Township Electrification Programme initiated by the National Development and Reform Commission (NDRC) to construct PV power stations, hydropower stations and other renewable energy power systems across a number of provinces
- Wind Power Concession Programme involving the promotion of the commercialisation of wind power
- Riding the Wind Programme involving the promotion of the domestication of large-scale wind turbines and the realisation of the large scale development of wind power in China¹⁴

¹⁴ Overview of Renewable Energy Development in China – 2006, Energy Bureau, Center for Renewable Energy Development, Energy Research Institute, National Development and Reform Commission, Chinese Renewable Energy Industries Association





A wind power plant in Xinjiang¹⁵



Forum on China's energy strategy¹⁶

 $^{^{15}\} Source: http://www.chinadaily.com.cn/photo/2006-09/24/content_696356.htm$

¹⁶ Source: http://www.china.org.cn/english/2005/May/129914.htm



1.2 Environmental Evaluation/SEA in Mainland China

In China, it is a statutory requirement under the National Environmental Impact Assessment Law (People's Republic of China) (《中華人民共和國環境影響評價法》), which came into force since 1 September 2003, that environmental impact assessment should be implemented for plans, programmes and construction projects. The Environmental Impact Assessment (EIA) Law (People's Republic of China) incorporates the concept of SEA for development plans and programmes.¹⁷ It is therefore considered as a SEA-type statutory instrument for environmental appraisal of plan and programme, but excluding policy.^{18, 19} As there is little experience on assessment of policies in Mainland China, it is considered to exclude environmental assessment for policies from the context of the EIA Law.²⁰

The EIA Law stipulates the SEA-type assessment for plans and programmes that should be carried out for:

- (i) the land use planning, or development plans of regions, river basins or sea areas;
- (ii) the plan or programme is drawn up for purposes of industry, agriculture, livestock breeding, forestry, energy, water management, transport, regional development, tourism or nature conservation.

After the assessment, the responsible authorities shall prepare an environmental report, which shall:

- (i) analyse, estimate and assess any potential environmental impacts that would appear with the execution of the proposed plan or programme.
- (ii) suggest any prevention methods or mitigation measures to relief the environmental issues that may occur.
- (iii) make conclusion of the environmental impact assessment.²¹

In order to specify which areas require environmental assessment as stated in Article 2 of No.7 and No.8 in the EIA Law, the State Environmental Protection Administration of China (SEPA) issued notices called 《編制環境影響報告書的規劃的具體範圍(試行)》 and 《編制環境影響篇章或說明的規劃的具體範圍(試行)》²² in 2004.

¹⁷ Reference to "Environmental Impact Assessment Regulations and Strategic Environmental Assessment Requirements – Practices and Lessons Learned in East and Southeast Asia" by the Environment and Social Development Department, East Asia and Pacific Region, The World Bank

http://siteresources.worldbank.org/INTEAPREGTOPENVIRONMENT/Resources/EIA&SEA-regional-review.pdf, Annex 2 - China

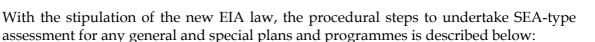
¹⁸ References made to a speech by Pan Yue, the Vice Minister of the State Environmental Protection Administration of China, http://www.sepa.gov.cn/ztbd/lszglt/200508/t20050829_11834.htm

¹⁹ References made to a presentation material called "Theory and Practice of Development of SEA in China" by Dr. Chui Hok – University of Nam Hoi (Research Center of SEA), http://info.worldbank.org/etools/docs/library/211097/Shaanxicn1.pdf, page 17, 34 & 41

²⁰ Extracted from a speech by Qu Geping, a member of Environmental Protection and Resource Conservation Committee of National People's Congress in 2003, http://www.cyol.net/cydgn/content/2003-02/13/content_610177.htm

²¹ The National Environmental Impact Assessment Law (People's Republic of China), Article 2 No.7 – 10, http://www.sepa.gov.cn/law/law/200210/t20021028_84000.htm

²² Originated from the web site of China Environment Impact Assessment, http://www.china-eia.com/indexcontent/zjwj/0100002.doc



- The plan and programme can be implemented only after the approval of the relevant assessment report.
- The department to draft the proposal of the plan/programme should also prepare the assessment report and submit to the supervised administration or local government for the approval.
- Prior to the proposal approval by the supervised administration or local government, the assigned environmental protection administration or other administration associated with the deputation of relevant department and experts should implement the auditing of the report and draw the conclusion.
- The supervised administration or local government should put the conclusion and suggestion for the assessment report as an important reference for decision making. If the conclusion and suggestion are not adopted, necessary explanation must be done and recorded for further checking.
- For those plan having great impact to environment, the department responsible for drafting the proposal should also track the practical impact during the execution of the plan.²³

The procedural steps to undertake SEA-type assessment for general plans and programmes (e.g. related to land use planning, or development plans of regions, river basins or sea areas) and that for special programmes for different sectors (like industry, agriculture, livestock breeding, forestry, energy, water management, transport, regional development, tourism or nature conservation) are presented in **Exhibit CN-1** and **Exhibit CN-2** respectively.²⁴

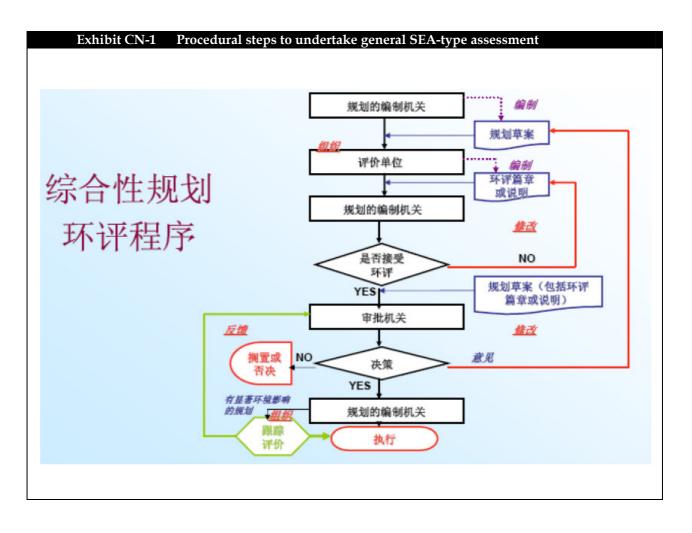
²⁴ References made to a presentation material called "Theory and Practice of Development of SEA in China" by Dr. Chui Hok – University of Nam Hoi (Research Center of SEA),

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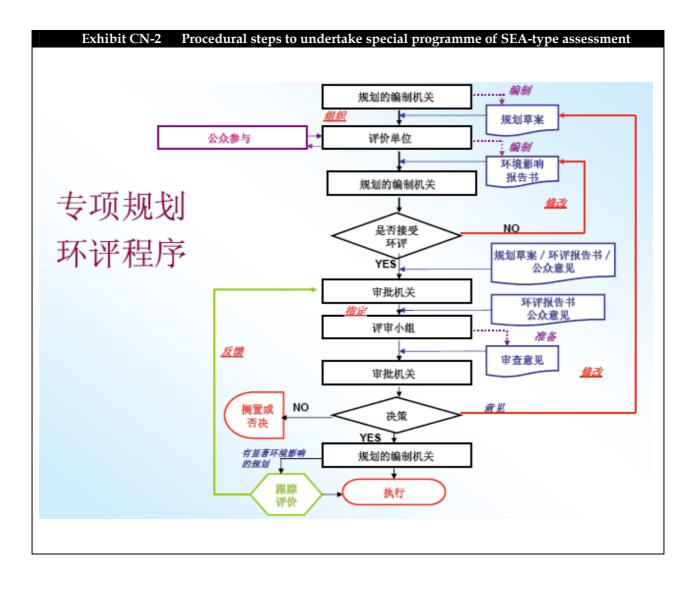
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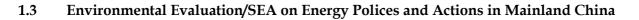
http://info.worldbank.org/etools/docs/library/211097/Shaanxicn1.pdf, pages 43, 44











As mentioned above, the EIA Law stipulates the SEA-type assessment for plans and programmes that should be carried out for those plan or programme is drawn up for the purpose of energy.

When establishing plans related to energy, it is necessary for the Chinese Energy Planning Establishment Unit to carry out environmental impact assessment which aims to analyse, forecast and assess the environmental impacts due to the implementation of the energy plans. Mitigation measures should be proposed to prevent or reduce the adverse environmental impacts and monitoring system should also be introduced. The environmental impact assessment report is the essential part for the energy plans. The approval authority will not give consent to the energy plans without environmental impact assessment report.²⁵

According to the notice《編制環境影響報告書的規劃的具體範圍(試行)》issued by the SEPA, energy related special plans that should prepare EIA for plans reports include:

- Oil (Gas) fields overall development plans in municipality with districts or above
- Hydroelectricity development plans in municipality with districts or above

Besides, natural resource development related special plans that should prepare EIA for plans reports include:

- Mineral resources: Mineral resources development and utilisation plans
- Land resources: Land development and reorganisation plans
- Marine resources: Marine natural resources development and utilisation plans in municipality with districts or above
- Climatic resources: Climatic resources development and utilisation plans

According to the notice 《編制環境影響篇章或說明的規劃的具體範圍(試行)》 issued by the SEPA, energy related special plans that should prepare EIA for plans reports include:

- Energy key special plans in municipality with districts or above
- Electricity development plans in municipality with districts or above (except hydroelectricity)
- Coal development plans in municipality with districts or above
- Oil and gas exploration plans

Besides, natural resources development special plans that should prepare EIA for plans reports include:

• Mineral resource exploration plans in municipality with districts or above²⁶

²⁵ Referenced to the "Investigation on EIA and policy management on energy plans in China", <u>http://www.efchina.org/csepupfiles/report/2006102695218621.041047054864.pdf/China_Energy_EnvironmentalE</u> <u>val_CN.pdf</u>, page 18

²⁶ Source from 《編制環境影響報告書的規劃的具體範圍(試行)》and《編制環境影響篇章或說明的規劃的具體範圍(試行)》, http://www.china-eia.com/indexcontent/zjwj/0100002.doc



A summary table for the energy policies and actions and SEA status in Mainland China is presented in **Exhibit CN-3**.

Exhibit CN-3 Summary of Energy Policies and Actions and SEA Status in Mainland China		
(a) Energy Policies and Actions		
Energy Policies and	Policies:	
Actions	Coal Laws	
	Electricity Laws	
	Energy Conservation Laws	
	Renewable Energy Laws	
	 Energy Law (under drafting) 	
	Actions:	
	 National Action Plan on climate change 	
	Medium and Long-term Energy Development Strategy and Plan to 2020	
	for renewable energy	
Guidance/Legislations	The current China's energy laws and legislative framework mainly include:	
for Energy	Coal Laws	
	Electricity Laws	
	Energy Conservation Laws	
	Renewable Energy Laws	
	The drafting work for a comprehensive legislation, China's "Energy Law",	
	was started officially in early 2006.	
(b) Environment	al Evaluations / SEA Status in Energy Policies and Actions	
Type of Assessment	EIA for plans	
Requirement	Statutory	
Mechanisms		
Legislation for	National Environmental Impact Assessment Law (2003) (EIA Law)	
Environmental		
Evaluation / SEA		
Applications	Plans and Programmes	



1.4 Analysis and Conclusions

In Mainland China, its indigenous energy resources are huge and there are currently several energy laws and legislative framework related to the energy resources. However, China has not yet has its foundational law in the energy field at the present stage. In this regard, the drafting work for the Energy Law was started officially in early 2006, which details the provisions on energy resource exploration, production, utilisation, conservation, etc. For actions responding the Kyoto Protocol, the National Action Plan 2007 details a series of measures for the country to cope with global warming, e.g. increasing the use of renewable energy, tax incentives for pollution-reduction projects, strengthening education, training and public awareness, etc.

For the energy situation in Hong Kong, the city has no indigenous energy resources. Such complete lack of energy resources poses tremendous challenges when it aims to increase and sustain conservation of energy in order to reduce the growing trend of energy use. Hong Kong has been relying on imported fossil fuels to support its energy sector. Besides, energy consumption has been increasing over the past decades, driven by the growth in the economy. In view of the close relationship between the Mainland China and Hong Kong, there are contracts to purchase nuclear power and natural gas from China in order to generate power and produce electricity.

While there is the introduction of the National Action Plan for tackling global warming in the Mainland China, Hong Kong has also put effort to face this challenge to the international community. According to the Policy Address 2007-2008, Hong Kong will seek to achieve a reduction in energy intensity of at least 25% by 2030 (with 2005 as the base year). To this end, the Government will endeavour to raise public awareness of climate change and to introduce energy saving measures at different levels. In order to further reduce greenhouse gas emissions, the Government plans to conduct carbon audit and implement emissions reduction campaign for new development projects.

With regard to the requirements of the Environmental Evaluation/SEA in Mainland China, it is a statutory requirement under the EIA Law to undertake SEA-type assessment for all regional and sectoral plans and programmes, including those for the purpose of energy. As there is little experience on assessment of policies in Mainland China, it is considered to exclude environmental assessment for policies from the context of the EIA Law.

The application of SEA-type assessment on energy is one of the key sectors, including the oil /gas fields' development, hydroelectricity plants, electricity and coal development plans. When comparing with Hong Kong, the application of SEA is generally for territorial land use planning, transportation policies and for very major infrastructure at an early stage. While there are considerations of the use of natural gas and other fuel options in strategic power supply proposals in Hong Kong, SEA would be a good strategic environmental assessment tool to evaluate impacts of alternative options and eventually come up with the most appropriate decision. SEA is also an effective tool to help decision makers to promote sustainable development.



1.5 Examples of Energy Policies/Actions or their Environmental Evaluation/SEA

Example CN-1	Electricity transmission development project in the Western region "西電東送" 北部通道火電規劃區域環境影響評價 ²⁷
Type of Study	Strategic Environmental Assessment
Description of Study	The project aims to develop the electricity transmission in the Western region such that the development can maintain the regional sustainable development and explore solutions to mitigation pollution problems such as air pollution. The analysis considers a balance between economic development and environmental protection, and evaluates pollution control strategies and the emission standard of pollutants. Mitigation measures were identified to control the volume of air pollutant under the existing technology for pollution treatment.
Summary of Alternatives	No alternatives were mentioned in the study.
Scope of	The evaluation parameters of atmospheric pollutants include:
Assessment/	• Sulfur deposition
Study	• SO_2
-	• NO _x
	• PM ₁₀
Environmental	Some of the mitigation measures to tackle air pollution include:
Measures	• Mist and dust regulatory measures-Close down small units, improve
	functions for dust collectors, and install the dust remover for the new units
	• NO _x – Close down small units, use low nitrogen combustion technology for
	new units, and reserve of denitrate sites
	• SO ₂ regulatory measures—install desulfurising devices, close down small units, and reduce coal consumption
Outcome of	The environmental impacts due to the electricity development project are
Study	considered insignificant for the project-beneficial areas. The air quality for most
	of the areas can also be improved. It is considered feasible for the
	implementation of the electricity transmission project, provided that the mitigation
	measures were implemented.

²⁷ http://info.worldbank.org/etools/docs/library/43909/SEATOT-ElectricitytransmissionCNCAIFahe.pdf



SEA of Petroleum Development Plan by Daqing Petroleum Administrative Bureau in the 11th Five-year Plan 大庆石油管理局"十一五"规划环评 ²⁸
Strategic Environmental Assessment
During the plan establishment and the decision-making process of the Daqing
Petroleum Administrative Bureau in the 11 th Five-year Plan, full consideration on the environmental effects has been made. It analyses, forecasts and assesses the
environmental impacts due to the implementation of the plan. It also proposes
mitigation measures to prevent or reduce the adverse environmental impacts. It
also coordinates the relationship between the economic growth, social progress
and environmental protection in Daqing. All these aim to implement sustainable
development in economic, social and environmental aspects.
No alternatives were mentioned in the study.
The environmental evaluation parameters in the study include:
Water resourcesAir
Noise
Ecology
Soil environment
Some of the mitigation measures for the environmental impacts include:
• Sewage treatment - sewage treatment system of various enterprises mainly
uses in the first kind of pollutants; while the sewage treatment system of the administrative bureau chemical industry mainly uses in processing various chemical and industrial wastes
 Solid waste processing - reduce solid waste positively, encourage comprehensive utilisation and sorting management
• Pollutant processing - install chemical waste processing facilities and production devices, utilise the special boilers to reduce SO ₂ , adopt the static electricity or dust collector devices to collect dust, reduces the discharge of Total Suspended Particulates
The plan under the Daqing Petroleum Administrative Bureau in the 11th Five-year
Plan is feasible and reasonable in the plan nature, function and development
direction. The compatibility between resources and energy is good between the
plan and the existing regional plan, and is better than the previous plans. The
selected location and layout of the petroleum site are reasonable. Other specific items will be commented in the future appraisal. At the same time, it is
important to strengthen the issues on environmental management and pollution
control, and to carry out all proposed mitigation measures stated in the report.

²⁸ SEA of Petroleum Development Plan by Daqing Petroleum Administrative Bureau in the 11th Five-year Plan, Daqing Petroleum Administrative Bureau, 2006

Ref. SA 07-003 Review of the International Energy Policies and Actions and the Latest Practice in their Environmental Evaluation and Strategic Environmental Assessment Final Report November 2007



Example CN-3	China Renewable Energy Scale-up Programme (CRESP) ²⁹
Description of	The CRESP has been developed by the Government of China in cooperation with
Programme	the World Bank and the Global Environment Facility to provide assistance with
	the implementation of a renewable energy policy development and investment
	program. It aims to:
	study the current renewable energy resources status;
	 learn from the experiences of developed countries in the development of renewable energy;
	 study and formulate renewable energy development policy in China;
	• implement renewable energy scale-up development;
	• provide cost-effective and commercial renewable energy electricity to the
	electric power market; and
	• replace coal-fired generation and reduce the local and global negative
	environmental impacts.
Phases of	The program implementation cycle is divided into three different implementation
Programme	phases, including:
	Phase 1 – Mandated Market Policy (MMP) piloted in 4 province
	Phase 2 – MMP adopted nationally and implemented in selected provinces
	Phase 3 – MMP implemented in all provinces
	All phases have supporting measures implemented nationally.
	The phasing is intended to assist a gradual roll out of the policy and supporting
	measures, in step with the implementation capacity of administrative and
	regulatory bodies, at the state and provincial levels, and of the commercial
	renewable energy industry.
Evaluation	Below shows some of the evaluation indicators for the programme :
Indicators	• Market framework in pilot provinces established through laws and
	regulations
	• Number of manufacturers/service providers meeting quality standards in
	wind and biomass
	• Increased renewable electricity and increased renewable capacity over
	baseline De local colora anticipat
Вно ано на на	Reduced carbon emissions
Programme Implementation	• Phase 1 would involve fewer investments in renewable electricity facilities than Phase 2 and 3
Details	
	Phase 1 would required considerable investment in capacity buildingInvolvement of 4 sub-components, including:
	 Further studies on MMP
	 Renewable Energy Law implementation
	 Wind Power Generation Technology Improvement
	 Biomass Power Generation Technology Improvement
	> Diomass rower Generation recunology improvement

²⁹ Overview of Renewable Energy Development in China – 2006, Energy Bureau, Center for Renewable Energy Development, Energy Research Institute, National Development and Reform Commission, Chinese Renewable Energy Industries Association, pages 18-21