

# Energy Working Group

## Key Recommendations

### 1. Remove Discrimination on Foreign Investment and Public Procurement in the Energy Sector

- Encourage foreign investment in the domestic energy sector in the same way as encouraging Chinese companies' to invest overseas. The former contributes more to China's energy security
- Lift limitations on ownership for companies in providing products and services for power generation, transmission and distribution projects
- Ensure a level playing field, both in terms of policy and practice, in public procurement of energy equipment by state owned enterprises (SOE)
- Support healthy competition by ensuring open market access to the latest and most advanced power technologies

### 2. Mobilise Market Forces for the Sustainable Development of the Wind Power Industry

#### 2.1 Allow the market freedom of choice between kilo watt (KW) & mega watt (MW) size wind turbines

- Remove restrictions on turbine size and allow the market (i.e., developers) to choose the turbines based on a technical-economic analysis of each project

#### 2.2 Ensure a Competitive and Sustainable Bidding Process in National Wind Power Concession Projects

- Reduce the weighted value on low tariffs in the bidding process to ensure that bidders can focus on the long-term sustainability of the project
- Increase the transparency in both the concession project system and in the bidding evaluation criteria and procedures to give all wind turbine manufacturers in the market the opportunity to participate in the bidding process

#### 2.3 Equalise Conditions for Foreign-Invested and Wholly Chinese Invested Wind Power Projects

- Make the registered capital requirements uniform for foreign and Chinese investors in renewable energy projects with a minimum of 20% registered capital for Chinese, foreign and Sino-foreign invested projects
- Allow foreign companies to hold a majority stake in Clean Development Mechanism (CDM) projects

### 3. Improve Gas Supply Security by Removing Barriers for Foreign and Private Participation in Domestic Gas Production

- Open up and expand domestic upstream access for private and foreign companies
- Facilitate Coal-Bed Methane (CBM<sub>i</sub>) production by granting more foreign co-operation licences to Chinese entities as soon as possible
- Encourage exploration and development of other unconventional gas (e.g., shale gas) through foreign cooperation and preferential policies
- Require gas pipeline companies to provide open access to third party gas producers, and ensure pipeline access to CBM<sub>i</sub> producers with material production (e.g., over 0.5 bcma)

### 4. Create a Policy Framework to Support Carbon Capture and Sequestration (CCS) Demonstration Project

- Study and propose a policy framework and support mechanism to facilitate the demonstration of CCS in China
- Develop flexible, adaptive approaches for early CCS demonstration projects, such as project-specific regulations, amendments to existing oil and gas laws and provide regulatory exemptions



## 5. Ensure a Successful and Safe Implementation of the Chinese Nuclear Programme

- Establish a clear legal and regulatory framework for the development of civil nuclear activities in China beginning with the promulgation of the awaited Atomic Energy Law announced by the State Council in Guo Han [2007] No. 64 which should reflect in particular the internationally accepted principles regarding Nuclear Third Party Liability
- Ensure that International Atomic Energy Agency (IAEA) recommendations are taken into full consideration particularly those for nuclear safety, for example in relation to site assessment
- Strengthen the power of the Chinese National Nuclear Safety Authority in terms of administrative independence, technical expertise and human resources
- Leverage the experience and knowledge of the European nuclear industry through continued collaboration

## 6. Climate Technology Transfer

- Create open and fair market access conditions as the best means of technology transfer for clean and renewable energy technologies

## Introduction to the Working Group

The Energy Working Group comprises over 35 member companies with combined revenues in 2008 exceeding EUR 17 billion, total cumulative investment in 2008 of over EUR 18 billion, and collective employment of more than 100, 000 people in China in 2008. The largest European energy and equipment manufacturing companies as well as industrial energy consumers are active members of the Working Group.

The Working Group seeks to establish an effective and constructive dialogue on energy policies with appropriate Chinese authorities, in order to:

- 1) Provide input for energy policy work in China by sharing issues and concerns as well as sharing best practices of European energy industries operating in China;
- 2) Create fair and transparent conditions for competition between foreign and Chinese companies; and
- 3) Promote the development and integration of clean and renewable energies.

## Recent Developments

The Working Group has noted the following significant developments in China's energy sector since June 2008:

- Reform of the domestic oil product pricing and taxation regime, with increased consumption tax and a change in the international reference from product prices to crude prices. The new pricing and taxation regime became effective on 1st January 2009.
- Reform of the value added tax (VAT) system, which also became effective on 1st January 2009, from a production-based – where taxes paid on equipment purchases are not offset in the VAT of a company's products, to consumption-based – where companies are allowed to pass on the VAT paid on equipment purchases to end consumers. This reform removed the VAT refund policy for some imported equipment and for the purchase of Chinese domestic equipment by foreign invested companies (FIE).
- Implementation of the RMB 4 trillion stimulus package and the successive publication of the revitalisation programmes for 10 industries.
- Accelerated activities of overseas energy and resource acquisition by Chinese companies and the new “financial loan for natural resources” deals.
- Promulgation of the “Catalogue of Encouraged Industries for Foreign Investment in the Central and Western Regions”.
- Publication of the white paper on “China's Policies and Action Plans on Climate Change” in October 2008.
- New round of bidding for wind power concessions (with a total capacity of 5.25 GW) was organised in March 2009 by the National Energy Administration, which has put the limits on the use of turbine sizes below 1MW for most of the concession projects.
- New financial incentives for solar photovoltaic (PV) demonstration projects, building integrated solar systems, and domestic wind turbine manufacturers, as

well as a VAT refund of critical parts of large scale wind turbines.

- A large increase in size and execution speed of the Chinese nuclear programme with the launch of no less than fifteen projects in parallel.
- The 2020 target for wind power has also been increased from 30 GW to 100 GW.

The Working Group has the following general concerns on those developments:

- Half-way oil pricing and taxation reform: the new pricing regime creates significant uncertainties for refinery investment as it stipulates that the refining margin will be gradually squeezed to zero once the crude oil price is above USD 80 per barrel.
- VAT reform reduces incentives for foreign investment: the VAT refund for purchase of domestic equipment by FIEs is a major balancing point against larger registered capital requirements for Sino-foreign joint venture projects. Abolishing this VAT refund policy creates a disincentive for foreign investment in China's energy field.
- Exclusion of foreign invested companies from renewable energy incentives: foreign invested companies are often excluded from the financial and fiscal incentives the Chinese government provides to encourage renewable energy development, thus discouraging further foreign investment in China's renewable energy sector.

## Key Recommendations

### 1. Remove Discrimination on Foreign Investment and Public Procurement in the Energy Sector

#### Concern

There are significant barriers that hinder foreign companies from accessing investment opportunities in China's energy sector, particularly in oil and gas exploration, refinery, wholesale and retail businesses, and new and renewable energies. Growing limitations are imposed on foreign companies that wish to offer of energy equipment and services to support large projects. There is also growing evidence of an increase in discrimination against foreign companies in public procurement for major equipment supplies.

#### Assessment

The Chinese government encourages domestic companies to acquire overseas energy assets (oil and gas resources, coal resources but also power transmission assets), while

tightly reserving domestic energy sector opportunities to domestic companies. These barriers are insurmountable for foreign companies to acquire oil wholesale and import licences. In addition, more limitations are being imposed on foreign companies that wish to supply energy equipment such as ultra high voltage power transmission equipment, nuclear power equipment, and wind power equipment.

In public procurement by Chinese power utilities and other state owned energy enterprises, there is increasing discrimination against 'non Chinese' domestic companies. There is a belief that limitations on foreign participation may promote the successful development of Chinese industry and hence Chinese innovation.

This discrimination materialises in different forms, but primarily occurs when an SOE is obliged by the Government to purchase its products or services from specific Chinese companies instead of having the freedom to choose at will from the market.

Case 1: a foreign company based in Europe wishing to participate in either a bid or a project is not eligible because it has not localised itself in China.

Case 2: a Wholly Owned Foreign Enterprise (WFOE) or Joint Venture (JV) of foreign enterprises duly registered and invested in China and with the corresponding business licence and qualification is excluded from bidding in specific projects in the power generation and transmission sectors because the bidding is restricted to "products and goods made by domestic Chinese companies".

Case 3: a WFOE or JV is accepted as a bidder but in practise they are systematically discriminated in favour of wholly owned Chinese domestic companies.

The Working Group firmly believes that such protectionist measures damage domestic interests in a variety of ways. Firstly, isolating domestic companies from competition can make them complacent and less efficient. Secondly, it limits the choices available to business and consumers. Thirdly, such methods tend to provoke protectionist action from foreign trading partners.

#### Recommendation

- Encourage foreign investment in the domestic energy sector in the same way as encouraging Chinese companies' to invest overseas. The former contributes more to China's energy security



- Lift limitations on companies ownership in providing products and services for power generation, transmission and distribution projects
- Ensure a level playing field, both in terms of policy and practice, in public procurement of energy equipment by SOE
- Support healthy competition by ensuring open market access to the latest and most advanced power technologies

## 2. Mobilise Market Forces for the Sustainable Development of the Wind Power Industry

### 2.1 Allow the market freedom of choice between KW & MW size wind turbines

#### Concern

In the 6th round of bidding for wind power concession projects launched in March 2009, the government restricted the use of turbines below 1MW for the majority of projects in China. This reduces the range of turbine options available for developers and undermines investment opportunities for a number of European manufacturers.

#### Assessment

One of the most efficient ways to secure the sustainable development of any wind power industry is to maximise the numbers of turbine options available.

Both KW and MW machines have unique and distinct advantages related to the different needs in any given project. In some projects, larger machines are a better option, while in others; smaller machines are the best option. The choice should be made based on a comprehensive technical and economic analysis of the conditions of the particular project. The developer is in the best position to make the most efficient choice.

The newly imposed restrictions on KW turbines will not only increase the risk of installing turbines that are unsuitable and inefficient, it will also easily do harm to the true development of a sustainable and reliable wind power sector and industry. This is why no other country in the world has established national turbine size restrictions.

#### Recommendation

- Remove restrictions on turbine size and allow the market (i.e., developers) to choose the turbines based on a technical-economic analysis of each project

### 2.2 Ensure a Competitive and Sustainable Bidding Process in National Wind Power Concession Projects

#### Concern

The world's most competitive wind turbine producers continue to be excluded from national concession bidding projects. Since 2005 no single international wind turbine manufacturer has won a concession tender.

#### Assessment

The concession model was supposed to promote competition that would allow the government to develop the wind industry at competitive prices. The competing wind power developers have remained large SOEs that are required to fulfil their Renewable Energy Share quota in installed capacity rather than in electricity output. Therefore, they tend to submit bids with extremely low tariffs and very poor profitability, which are based on over-estimations of wind resources, high expectations of electricity generation and underestimations on the cost of wind turbines and their service costs. This puts domestic private and foreign companies at a disadvantage and undermines the original goal of sustainable wind power development.

Another issue is the lack of transparency in the concession bidding process. This makes it very difficult for foreign manufacturers to react on a timely basis to decisions made in the bidding process. Also, the bidding evaluation criteria are difficult to understand and are often subject to change. This hampers the ability of companies to prepare for the biddings.

#### Recommendation

- Reduce the weighted value on low tariffs in the bidding process to ensure that bidders can focus on the long-term sustainability of the project
- Increase the transparency in both the concession project system and in the bidding evaluation criteria and procedures to give all wind turbine manufacturers in the market the opportunity to participate in the bidding process

### 2.3 Equalise Conditions for Foreign-Invested and Wholly Chinese Invested Wind Power Projects

#### Concern

The new VAT regulation creates a disadvantage for foreign renewable energy companies who relied on the preferential tax treatment of the previous system to offset the higher capital requirements over wholly Chinese-owned companies. The CDM eligibility that is only available

for Chinese majority-controlled wind power projects further suppresses foreign investment in wind power projects.

#### Assessment

Before 1st January 2009, many Chinese investors in renewable energy projects would consider investing through a Sino-foreign structure to benefit from the VAT refund policy for foreign invested companies. The VAT refund (approximately 10-11% of the total investment of a project) was considered as a trade-off against the disadvantage of a higher registered capital ratio required for Sino-foreign ventures. (For a typical wind power project of 49.3 MW, the registered capital requirement for a Sino-foreign invested project is a minimum of 33% while for a Chinese invested project it is only 20%).

The new VAT policy which came into effect on 1<sup>st</sup> January 2009 eliminated this advantage for foreign invested companies, whereas the higher capital requirement for Sino-foreign invested projects remains, hence discouraging foreign investment in the wind power sector.

If foreign investors, due to the new VAT regulation, cannot cooperate with Chinese partners for investment in renewable energy projects, foreign investors are also cut off from CDM projects. To qualify for a CDM project, a foreign investor needs to cooperate with a Chinese partner because only projects that are (absolute) majority owned by a Chinese investor can obtain CDM accreditation.

#### Recommendation

- Make the registered capital requirements uniform for foreign and Chinese investors in renewable energy projects with a minimum of 20% registered capital for Chinese, foreign and Sino-foreign invested projects
- Allow foreign companies to hold a majority stake in CDM projects

### 3. Improve Gas Supply Security by Removing Barriers for Foreign and Private Participation in Domestic Gas Production

#### Concern

China faces a growing problem over its gas supply security in that it requires a secure supply at a reasonable cost. There is evidence that some local supply interruptions are already occurring. While great effort has been made to secure the gas supply from overseas in the form of liquefied natural gas (LNG) and pipeline gas, more could be done to increase the domestic supply to the target level.

#### Assessment

On a large scale natural gas appears to be the preferred fuel to meet the increasing demand for environmentally clean and reliable energy. The West-East Pipeline (WEP I) commenced operations in 2003, transporting 12 billion cubic metres a year (bcma) of natural gas from Northwest China to Eastern provinces including Shanghai. Construction of the West-East Pipeline II (WEP II) started in 2009 to import 30 bcma of gas from central Asia for 30 years and to deliver the gas over 7000 km up to Guangdong and Hong Kong. These pipelines, together with the LNG import terminals, will form a national natural gas grid for China.

A national project of such magnitude has significant uncertainties, notably with regard to the availability of central Asian gas reserves, the available level of supply at the desired pace and the downstream affordability of long-hauled gas.

While securing the supply of foreign natural gas is important to enabling China's growth, it is critical to facilitate and create incentives for domestic gas production. This could be achieved by opening up and/or expanding upstream access for private and foreign companies; granting additional foreign co-operation licences for unconventional gas resources such as coal-bed methane (CBM<sub>i</sub>) to encourage further exploitation; clarifying the structure and terms for unconventional gas resources such as shale gas to create incentives for participation; and allowing open and transparent access to pipeline infrastructure, which is currently controlled by national oil companies.

China has significant CBM<sub>i</sub> resources but lacks the technology and expertise for exploration and production. At present, international cooperation is limited because only one single company (China United CBM<sub>i</sub> Co., or CUCBM) has the licence for international co-operation. However, circumstances are changing, albeit slowly. In the 2007 amendment to the "Regulations on Exploiting Onshore Oil and Gas Resources with Foreign Companies", the government decided to end the monopoly of CUCBM for foreign co-operation and has recently approved the separation of PetroChina from CUCBM. However, no other Chinese entity (including PetroChina) has yet obtained a foreign co-operation licence and many existing foreign cooperation projects (e.g., those taken over by PetroChina from CUCBM) or potential new projects are being delayed. This issue will need to be addressed before progress on CBM<sub>i</sub> can be made.



Access to the pipeline infrastructure by independent gas producers is another major issue. Without clear regulations mandating open and non-discriminatory access, current pipeline owners (mainly national oil companies) discourage independent gas production. In Qinshui (the most developed CBM<sub>i</sub> basin in China), for example, pipeline access has become one of the biggest obstacles to large scale production. Furthermore, it is a frequent occurrence for two companies to exploit the same gas basin for the same market to build two separate pipelines, which may result in a sub-optimal outcome for the natural gas producers, consumers and China as a whole.

#### Recommendation

- Open up and expand domestic upstream access for private and foreign companies
- Facilitate CBM<sub>i</sub> production by granting more foreign co-operation licences to Chinese entities as soon as possible
- Encourage exploration and development of other unconventional gas (e.g., shale gas) through foreign cooperation and preferential policies
- Require gas pipeline companies to provide open access to third party gas producers, and ensure pipeline access to CBM<sub>i</sub> producers with material production (e.g., over 0.5 bcma)

### 4. Create a Policy Framework to Support CCS Demonstration Project

#### Concern

To fully utilise coal while addressing global climate change, the Chinese government has expressed the desire to develop CCS technology. However, significant technical, regulatory and commercial obstacles exist for the successful development of CCS projects in China.

#### Assessment

As part of its energy security and oil-substitution strategy, China has ambitious plans to turn the abundant domestic coal resources into chemical products and clean fuels. Coal conversion would provide an excellent opportunity for a CCS demonstration, as high concentrations of CO<sub>2</sub> sources are readily available, either for enhanced oil recovery, or for permanent storage in deep aquifers. Shenhua, China's largest coal company, has a plan to build the country's first large scale CCS project at its coal conversion site in Inner Mongolia. Some of the European Chamber's member companies, who are engaged in China's coal conversion business, are also examining the CCS options.

As CO<sub>2</sub> management and CCS are still in their infancy in China with many associated risks, it is important for the Chinese government to work out a policy and regulatory framework to support the development of CCS demonstration projects.

#### Recommendation

- Study and propose a policy framework and support mechanism to facilitate the demonstration of CCS in China
- Develop flexible, adaptive approaches for early CCS demonstration projects, such as project-specific regulations, amendments to existing oil and gas laws and provide regulatory exemptions

### 5. Ensure a Successful and Safe Implementation of the Chinese Nuclear Programme

#### Concern

The Chinese authorities have launched an ambitious programme to increase the share of electricity produced from nuclear power to between 4 and 5% by 2020. Achieving this objective will require the rapid development of technical and human resources, the adherence to IAEA best practices, and the utilisation of international experience.

#### Assessment

Today's Chinese nuclear installed capacity is only 9 GW. In order to achieve the 5% target by 2020, a nuclear production capacity of up to 70 GW would be required, depending on the projections of total electricity installed capacity. This requires the mobilisation of a tremendous amount of industrial resources and the implementation of a large number of projects in parallel.

Although China has several decades of R&D experience and has operated commercial nuclear installations for a number of years, China's construction experience in large size nuclear reactors is relatively limited. Real operational experience is in the hands of a limited number of experts, most of them having been trained abroad. Today, the Chinese nuclear programme is characterised by its extreme size and its execution almost entirely "locally", i.e., by and under the responsibility of Chinese companies. These two characteristics place an unprecedented burden on all the Chinese nuclear players (power companies, engineering companies, suppliers as well as supervisory bodies), who face the important challenge of having to mobilise large amounts of resources within a very short period of time.

Meanwhile, no less than 15 new construction projects for a total of more than 40 units have already been launched or announced. A key element to the successful construction of these projects will be a superior level of technical expertise and a strong appreciation and adherence to stringent nuclear safety conditions.

Finally, bearing in mind the success of Europe's nuclear programme in the eighties, it is worth highlighting two other points that need to be considered: 1) the importance of a rational organisation of industry focusing on a small number of experienced industrialists, and 2) the significant industrial risks linked to the simultaneous launch of several generation 3 construction projects if a nuclear power reactor generation 3 type has not yet been tested and its technology proven.

#### Recommendation

- Establish a clear legal and regulatory framework for the development of civil nuclear activities in China beginning with the promulgation of the awaited Atomic Energy Law announced by the State Council in Guo Han [2007] No. 64 which should reflect in particular the internationally accepted principles regarding Nuclear Third Party Liability
- Ensure that IAEA recommendations (<http://www.iaea.org>) are taken into full consideration particularly those for nuclear safety, for example in relation to site assessment
- Strengthen the power of the Chinese National Nuclear Safety Authority in terms of administrative independence, technical expertise and human resources
- Leverage the experience and knowledge of the European nuclear industry through continued collaboration

## 6. Climate Technology Transfer

### Concern

Both in international climate change negotiations and in the published climate change policies and actions plans, the Chinese government has been calling for the transfer of climate friendly technologies from developed countries

## Abbreviations

Bcma	billion cubic metres a year
CBM <sub>i</sub>	coal-bed methane
CCS	Carbon Capture and Sequestration
CDM	Clean Development Mechanism
CUCBM	China United CBM Co.
FIE	Foreign Invested Enterprise
IAEA	International Atomic Energy Agency

to developing countries. A great amount of trust is placed on the role of governments to acquire technologies and transfer them free of charge to the developing world without adequate attention to the business to business co-operation as the best means of technology transfer.

### Assessment

Technology transfer is an old concept largely debated during the North-South dialogue 50 years ago. Little was achieved as a result of that dialogue but China's reform and open-door policy experience shows that an open and competitive market that attracts foreign direct investment is the best way forward.

Technology is a complex set of hardware, skills, know-how and support systems that are often difficult to transfer from one place to another. It is the result of years of innovation, investments and accumulation, and is transferable only through joint business activities. Today, most technologies are in the hands of private companies, not governments. Therefore, any proposal for a government to purchase a certain technology and give it freely to another government is highly unrealistic. Company to company co-operation through business activities is the best form of technology transfer.

European renewable energy companies through their joint ventures with Chinese partners are effectively and efficiently carrying out technology transfer on a daily basis. This transfer has been very successful as China now has an impressive renewable energy industry. For instance, 100% of the wind turbines used in China have been produced locally and China has become the world's largest manufacturer and exporter of solar PV technology.

### Recommendation

- Create open and fair market access conditions as the best means of technology transfer for clean and renewable energy technologies

JV	Joint Venture
LNG	liquefied natural gas
PV	photovoltaic
SOE	State-Owned Enterprise
VAT	value added tax
WEP	West-East Pipeline
WOFE	Wholly Owned Foreign Enterprises