Certain information and statistics set out in this section have been extracted from various government publications, market data providers, other independent third party sources and industry reports prepared by Frost & Sullivan and Garrad Hassan which were commissioned by us, unless otherwise indicated. We believe that the sources of this information are appropriate sources for such information and have taken reasonable care in extracting and reproducing such information. We have no reason to believe that such information is false or misleading or that any fact has been omitted that would render such information false or misleading. Such information contained herein has not been independently verified by us, the Joint Global Coordinators, the Joint Sponsors, the Joint Bookrunners, the Underwriters or any other party involved in the Global Offering and no representation is given as to its accuracy. Accordingly, such information should not be unduly relied upon.

OVERVIEW

Energy Consumption in the PRC

The PRC is one of the fastest growing economies worldwide and is also the second largest economy in the world. Between 2001 and 2010, the PRC experienced growth in real GDP at a CAGR of 10.7%. According to the 12th Five-Year Plan, between 2011 and 2015, the PRC Government expects to achieve an average annual GDP growth of 7%.

In line with the growth of the PRC economy, energy consumption in the PRC has also increased rapidly, primarily driven by rapid industrialization and also by rising residential power demand as the PRC's per capita income has increased. Since 2001, growth in power consumption (which represents approximately 20% of total energy consumption in the PRC) has exceeded real GDP growth in most years. The following table sets forth a comparison of the PRC's real GDP growth rate and the growth of power generation.

Real GDP Growth Rate and Power Generation Growth Rate in the PRC (2001 to 2010)

Year	Real GDP Growth Rate Over Preceding Year	Power Generation Growth Rate Over Preceding Year
	(%)	(%)
2001	8.3	9.2
2002	9.1	11.7
2003	10.0	15.5
2004	10.1	15.3
2005	10.4	13.5
2006	11.6	14.6
2007	13.0	14.5
2008	9.6	6.5
2009	9.1	6.6
2010	10.0	13.5

Sources: International Monetary Fund, World Economic Outlook Database, April 2010; BP Statistical Review of World Energy, June 2010; China National Bureau of Statistics; China Electricity Council

However, the PRC's per capita power generation volume is still significantly lower than those of developed countries, suggesting that demand for power will continue to increase. The following table sets forth power generation volumes for selected countries on a per capita basis.

Power Generation Volume and Per Capita Power Generation
(Selected Countries for 2010)

Country	Power Generation Volume (A Hundred Million kWh)	Per Capita Power Generation Volume (kWh)
United States	41,200	13,255
Japan	9,290	7,254
Korea	4,747	9,712
China	**41,274**	**3,081**

Source: China Electricity Council

As a result of the PRC's resource structure, the majority of the PRC's power generation is fossil-fuel based, and demand and consumption of fossil fuels has increased in line with the increase in energy demand. According to the BP Statistical Review of World Energy, fossil fuel consumption in the PRC grew by 122.9% from 2001 to 2010, which is much higher than the global average consumption level of 26.9%. In 2010, the PRC replaced the United States as the biggest fossil fuel consumer in the world, consuming a petroleum equivalent energy level of 2,240.0 million tons in that year.

Energy Development Plan in the PRC

The PRC's rapid industrialization and continuous growth in fossil fuel consumption has resulted in serious concerns over greenhouse gas emissions and air pollution. According to Frost & Sullivan, the PRC is the largest producer of CO_2 and air pollutants (such as SO_2 and NOx) in the world. The World Bank estimates that the healthcare cost of air and water pollution in the PRC is equivalent to approximately 4.3% of GDP and the total cost of such pollution (and if non-health impact) is equivalent to 5.8% of GDP (*Source: Cost of Pollution in China: Economic Estimates of Physical Damages, 2007, World Bank*).

The PRC Government has become increasingly concerned about environmental issues such as pollution. In 2002, it approved the Kyoto Protocol in 2002 and since 2005 it has promulgated various laws and regulations to encourage the development of the renewable energy industry to reduce reliance on fossil fuels. In November 2009, the State Council of the PRC announced at their executive meeting that the PRC was committed to reducing carbon dioxide emissions per unit of GDP by 40% to 45% by 2020 compared to the level in 2005. In order to achieve this target, China aims to reduce reliance on fossil fuel-based energy and encourage the development of the clean energy industry and non-fossil fuel-based energy industry. The PRC Government has issued several plans relating to renewable energy development, energy conservation and emissions reduction. In renewable energy development, the PRC Government has committed to increasing the proportion of total energy consumption from non-fossil fuel sources from the current level of 3% to 15% by 2020. The State Grid has forecast that renewable energy installed capacity is expected to

increase from the current 4.5% of total installed capacity in the PRC to 17.8% by 2020 (i.e. 270 GW of installed capacity by 2020). In terms of the energy conservation and emissions reduction industry, the PRC Government has issued policies to encourage energy conservation and the use of clean fossil fuel technology, and reduce air pollutant emissions, such as SO_2 and NOx.

Governmental policies and the regulation of the energy and energy-related sectors have a direct impact on our business and demand for our service and product offerings. This section discusses the various industry sectors in which we operate or which directly impact our business.

ENVIRONMENTAL PROTECTION AND ENERGY CONSERVATION SOLUTIONS IN THE POWER INDUSTRY

Coal Power Industry in the PRC

Coal is an abundant resource within the PRC, and is the primary source for power generation in the PRC. Coal-fired power industry accounted for 68.67% of aggregate installed capacity in the PRC in 2010. The rapid economic development of the PRC has resulted in rapid increases in the PRC's coal-fired power generation capacity, due in part to the relative availability and price of coal, as compared to oil and gas. Although the restructuring of the power generation industry to reduce reliance on coal-fired power generation has commenced, we believe that coal will remain as the most important energy source in the PRC for the foreseeable future.

The following table sets forth the percentage of installed capacity for coal-fired power facilities to total installed capacity for the PRC for the years 2003 to 2010, as published by the China Electricity Council.

Installed Capacity of Coal-Fired Power Facilities in the PRC (2003 to 2010)

Year	2003	2004	2005	2006	2007	2008	2009	2010
Total Installed Electricity Capacity (MW)	391,410	443,290	517,190	622,000	713,290	792,530	874,070	962,190
Installed Electricity Capacity of Coal-fired Power Plants (MW)	261,770	300,406	357,150	443,800	508,162	556,100	604,662	660,775
Percentage of Coal-fired Power Plants' Installed Capacity in the Total Installed Electricity Capacity	66.88%	67.77%	69.06%	71.35%	71.24%	70.17%	69.18%	68.67%

Source: China Electricity Council

According to the China Electricity Council, China's aggregate power generation volume increased at a CAGR of 8.8% from 3,256 TWh in 2007 to 4,192 TWh in 2010. During this period, the aggregate installed capacity of coal-fired plants increased at a CAGR of 9.2% from 508 GW in 2007 to 661 GW in 2010. The China Electricity Council and Frost & Sullivan predict that due to continued rapid economic growth, demand for electricity in China will exceed 6,000 TWh by 2014 and that the total installed capacity of coal-fired power plants in China will exceed 991 GW by the end of 2014, representing a CAGR of 9.4% and 8.4%, respectively.

The following table sets out the annual incremental and cumulative installed capacity of coal-fired power plants in the PRC between 2007 to 2010, as well as estimates for 2011 to 2015:

Installed Capacity of Coal-Fired Power Plants in China (2007 to 2015E)

Year	2007	2008	2009	2010	2011E	2012E	2013E	2014E	2015E
Annual Installed Capacity (MW)	64,362	47,938	48,562	56,113	47,202	50,574	54,187	58,057	62,205
Cumulative Installed Capacity (MW)	508,162	556,100	604,662	660,775	707,977	758,551	812,738	870,795	933,000
Cumulative Capacity Growth Rate (%)	14.50%	9.43%	8.73%	9.28%	7.14%	7.14%	7.14%	7.14%	7.14%

Note: *All figures are rounded.*

Sources: *China Electricity Council, Frost & Sullivan*

The power industry in the PRC is concentrated. The five largest PRC power groups take up approximately 50% of the market share of the power industry in the PRC. The four second-tier power groups represent approximately 10% of the remaining market while the three third-tier power groups represent approximately 5%. The remaining market shares are largely contributed by provincial and municipal power companies.

ENVIRONMENTAL ISSUES LINKED WITH COAL-FIRED POWER GENERATION

Heavy pollution

In general, the power industry and fossil fuel-based power generation are major sources of SO_2 and NOx emissions. SO_2 is a pollutant linked to respiratory distress, asthma, emphysema and bronchitis while NOx emissions are linked to various health problems including respiratory problems, heart disease and lung damage. In 2010, the volume of industrial SO_2 emissions in the PRC was approximately 18.6 million tons, representing approximately 85.3% of total SO_2 emissions in the PRC for that year, which was approximately 21.85 million tons. SO_2 emissions attributable to coal-fired power plants was approximately 10.19 million tons, accounting for approximately 54.7% of the total industrial SO_2 emissions. In 2010, industrial NOx emissions reached approximately 11.55 million tons, out of the total national NOx emissions volume of 15.0 million tons. Power and heat supply accounted for approximately 96.1% of total industrial NOx emission during that period, with power plant NOx emissions of approximately 11.10 million tons. As pollution within the PRC continues to be one of the PRC Government's primary concerns, emissions reduction and related technologies is, and is expected to continue to be, one of the primary development areas in the PRC power generation industry.

High water consumption

The coal power industry also consumes a large amount of water. The average water consumption in the coal power industry in the PRC is much higher than that of developed countries.

As the PRC has limited water resources, improving water use efficiency and the level of water conservation management is one of the important issues faced by the fuel-burning power industry.

High energy consumption

A large amount of energy is required in the process whereby fossil fuels such as coal and oil are transformed into electricity. According to State Electricity Regulatory Commission, the average unit coal consumption by Chinese coal-fired power plants in 2010 was 335g/kWh.

Therefore, production efficiencies are a significant area of interest for the coal-fired power generation industry within the PRC. Energy conservation, in the form of reducing the amount of energy required in the generation process and thereby reducing coal consumption, is an area of increased awareness in the coal-fired power generation industry, in view of objectives such as securing energy sources and supplies.

ENVIRONMENTAL PROTECTION AND ENERGY CONSERVATION IN THE COAL POWER INDUSTRY IN THE PRC

The PRC Government objectives of improving the energy mix and increasing reliance on renewable energy have to be balanced against factors such as the relatively low generation cost of coal-fired power and the shortage of power within the PRC. In the foreseeable future, coal-fired power generation is expected to continue to play a key role in the PRC energy sector and installed capacity is expected to continue to grow from the current 660,775 MW to 933,000 MW by the end of the 12th Five-Year Plan, in line with the rapid growth experienced in the period between 2005 and 2010. As more clean energy technology is developed and becomes available, further efficiencies in coal-fired power generation may be achieved, such as lower consumption of coal in larger scale coal-fired power plants with IGCC (integrated gasification combined cycle). We believe that demand in the environmental protection and energy conservation sector related to coal-fired power generation will continue to grow in line with the expected continued growth in coal-fired power generation.

Among others, major business segments in the environmental protection and energy conservation solutions related to coal-fired power generation include the following services:

Environmental Protection Services:

*Flue Gas Desulfurization (“**FGD**”):* to remove sulfur dioxide (SO_2) from the flue gases discharged by fossil fuel power plants.

Flue Gas Denitrification: to remove nitrogen oxide (NOx) from the flue gases discharged by fossil fuel power plants.

Wastewater Treatment: water treatment for power plants, reclaimed water reuse services, industrial wastewater treatment, municipal wastewater treatment and seawater desalinization.

Energy Conservation Services:

Plasma-assisted Coal Combustion: using plasma-assisted coal combustion technology to replace oil used in the traditional ignition method and to reduce the operational cost of coal-fired power plants.

Steam turbine flow passage retrofitting: to increase the efficiency and safety levels of the steam turbines in power plants. This service involves designing the flow passage system of the steam turbine to improve the flow efficiency of the steam in the passage and to reduce steam leakage when passing through the internal flow passage, thereby increasing the efficiency of the turbine and the generator.

Environmental Protection Services

The reduction of SO_2 and NOx emissions is one of the primary areas of focus in environmental protection in the PRC. In 2010, the PRC Government listed environmental protection and energy conservation as a strategic emergent industry and a pillar of the national economy. In July 2011, the PRC Government issued the *12th Five-Year Plan for Development of Environmental Protection Technology* and the *Comprehensive Working Program for Energy Conservation and Emissions Reduction during the "12th Five-Year Plan" Period* (《"十二五"節能減排綜合性工作方案》). The 12th Five-Year Plan and the Comprehensive Working Program aims to reduce national SO_2 emissions by 8% by 2015 compared to 2010, and sets out specific targets for each province in light of this objective. At the same time, it also aims to reduce national NOx emissions by 10% by 2015 compared to 2010, and sets out specific targets for each province with a view to achieving the target.

On July 29, 2011, the Ministry of Environmental Protection and General Administration of Quality Supervision, Inspection and Quarantine (國家質量監督檢驗檢疫總局) issued the revised *Emission Standard of Air Pollutants for Thermal Power Plants* (《火電廠大氣污染物排放標準》) (the "Revised Emission Standards"), which will take effect on January 1, 2012 (for new power plants) and July 1, 2014 (for existing power plants). The Revised Emission Standards impose a national requirement on coal-fired power plants, with a stricter set of environmental protection standards applicable to coal-fired power plants. See "Regulations—SO_2 and NOx Emissions Reduction". Under the national requirement, NOx emissions are restricted to 100 mg/m³ and SO_2 emissions are restricted to 100 mg/m³ (for new power plants) and 200 mg/m³ (for existing power plants), except for Guangxi, Sichuan, Chongqing and Guizhou for which SO_2 emissions are restricted to 200 mg/m³ (for new power plants) and 400 mg/m³ (for existing power plants). Fly ash emissions are restricted to 30 mg /m³.

According to Frost & Sullivan, the Revised Emission Standards will be a key driver for growth in the environmental protection and energy conservation sector, with substantial increases expected in the market for FGD and denitrification services between 2011 and 2015. The following table sets forth the expected increases in installed capacity for coal-fired power generation and the total expected installed capacity of coal-fired power plants with FGD devices for the period between 2011 and 2015:

Year	2011E	2012E	2013E	2014E	2015E
Total Installed Capacity of Coal-fired Power Plants (MW)	707,977	758,551	812,738	870,795	933,000
Installed Capacity of Coal-fired Power Plants with Flue Gas Desulfurization Devices (MW)	634,254	709,402	788,163	870,795	933,000
Cumulative Installed Capacity of Coal-fired Power Plants with Flue Gas DeNOx Devices (MW)	176,596	404,297	635,611	870,795	933,000

Sources: The Ministry of Environmental Protection, China Electricity Council

SO_2 Emissions Reduction

According to Frost & Sullivan, the PRC has been the world's largest producer of SO_2 since 2005. A recent survey conducted by the Ministry of Environmental Protection across 338 cities in China suggests that more than 70% of these cities are classified as polluted as they failed the Chinese air cleanliness assessment, of which 40% are classified as heavily polluted. The PRC government in its 11th Five-Year Plan from 2006 to 2010 sets a target of a 10% reduction in SO_2 emission from emission levels in 2005 by the end of 2010. Based on these policies, the NDRC and the Ministry of Environmental Protection jointly promulgated *the Trial Administration Rules for Desulfurization Electricity Tariffs and Operation of the Desulfurization Appliances of Fossil-Fired Power Generator* (draft) in 2007, which established detailed desulfurization standards applicable to coal-fired power plants.

The following table sets forth actual and estimated coal-fired power generation installed capacity, coal-fired power generation installed capacity with FGD appliances and installation rates for FGD appliances for the period between 2007 and 2015:

Year	2007	2008	2009	2010	2011E	2012E	2013E	2014E	2015E
Installed Capacity of Coal-fired Power Plants with Flue Gas Desulfurization Devices (MW)	273,843	400,312	499,542	562,477	634,254	709,402	788,163	870,795	933,000
Total Installed Capacity of Coal-fired Power Plants (MW)	508,162	556,100	604,662	660,775	707,977	758,551	812,738	870,795	933,000
Installation Rate	53.89%	71.99%	82.62%	85.12%	89.59%	93.52%	96.98%	100.00%	100.00%

Sources: Frost & Sullivan, China Electricity Council, the Ministry of Environmental Protection

The following table sets forth the actual and estimated size (as applicable) of the FGD market (based on annual installed capacity) in China for the period between 2007 and 2015:

	2007	2008	2009	2010	2011E	2012E	2013E	2014E	2015E
Annual Installed Capacity (MW)	125,295	126,496	99,230	62,935	71,777	75,149	78,762	82,632	62,205

Sources: Frost & Sullivan, China Electricity Council,

The Revised Emission Standards have also resulted in the growth of the FGD retrofitting market, due to demand from existing power producers who are required to comply with the new standards. The following table sets forth estimates of existing installed capacity which will be required to be retrofitted in order to comply with the Revised Emission Standards between 2011 and 2015:

Year	2011E	2012E	2013E	2014E	2015E
Cumulative Retrofit Capacity of FGD Devices (MW)	38,777	77,554	116,330	155,107	155,107

Source: Frost & Sullivan

The major FGD methods are set forth below.

Limestone-gypsum WFGD

In the limestone-gypsum WFGD process, flue gas is treated with limestone slurry in order to remove and neutralize SO_2. The final product is calcium sulphate dihydrate (gypsum). Currently, the limestone-gypsum WFGD method is used in about 90% of the processes used to reduce SO_2 emissions.

The initial capital costs of the limestone-gypsum WFGD process, namely, appliance manufacturing and product costs and installation costs, are relatively high compared with other types of FGD processes. However, despite its relative complexity, it is a highly efficient desulfurization process (with a general removal efficiency of approximately 95%) with lower operating costs, due to the cost of limestone used in the process and offsetting revenues from gypsum produced, which can be sold rather than being disposed of. Economies from this process are incremental and are particularly important for plants with high sorbent consumption.

In general, this process offers the lowest through-life cost option for large inland plants using coal with medium to high sulfuric high load factors and long residual lives. It has been widely adopted worldwide, is highly developed, and within the PRC it is typically adopted in large power stations with installed capacities of at least 300 MW.

Seawater FGD

The seawater FGD process uses the natural characteristics and elements of seawater to absorb and neutralize SO_2 in flue gas. This type of FGD process does not create absorbents, desulfurization by-products or secondary pollution and is therefore considered to be safe and pollution-free. Seawater FGD processes are characterized by low capital investment requirements (generally production and installation costs for the appliance), low operational power consumption and high sulphur removal efficiencies. As such, the seawater FGD process could be an economically and environmentally sound desulfurization plan for coastal power stations.

Dry gas desulfurization with circulating fluidized bed (CFB)

In the CFB process, flue gas passes through a dense mixture of lime (calcium hydroxide) and reaction products which remove SO_2. The normal absorbent used is quicklime, which is hydrated on-site to make calcium hydroxide powder (hydrated lime). This sorbent is injected into the base of the reactor. Water is also added to humidify the flue gas and thereby improve the removal of SO_2 and particulate. The installation costs of CFB appliances are lower than those of limestone gypsum appliances and the SO_2 removal efficiencies of this process can reach approximately 80% to 90%. CFB appliances also require less space compared to limestone gypsum appliances. However, the operational costs associated with the CFP process are comparatively higher to that of limestone gypsum WFGD process, and includes disposal costs associated with waste byproducts (which are typically generated by all semi-dry desulfurization processes), although the process does not produce waste water. Due to the simplicity, removal efficiency, low space requirements and

relatively low operating costs (where operated on a smaller scale) this process is generally suitable for smaller power plants with an installed capacity of under 30 MW. In addition, the process does not require large amounts of water and is therefore suitable for power plants located in dry areas such as the Northeastern Chinese provinces.

Ammonia desulfurization

In the ammonia desulfurization process, flue gas is treated with ammonia, which produces NH_4SO_4, a byproduct which can be used to produce fertilizer. The ammonia desulfurization process is suitable for areas which have access to low-cost ammonia supplies.

Organic amine-assisted desulfurization

Organic amine-assisted desulfurization is a new method of desulfurization which produces the by product sulfate acid, an industrial raw material with economic value in certain regions in the PRC. It is capable of application in power plants using coal resources with high sulfuric content. Coal prices are significantly lower for coal with high sulfuric content, and accordingly, power plants which incorporate this process may be able to reduce their raw material costs significantly by using more low-cost high sulfuric content coal in their production process. Given the cost and availability of coal within the PRC, this method has great market potential due to the production and cost efficiencies in the power generation process.

NOx Emissions Reduction

NOx emissions reduction is another key area in the field of pollution control in the PRC. The primary nitrogen pollutants emitted by boilers are nitric oxide (NO) and nitrogen dioxide (NO_2), together generally known as NOx. NO accounts for 90% of NOx emissions, with the remaining 10% being attributable to NO_2. In 2010, coal powered generation accounted for 73.3% of total NOx emissions in China, producing 11.1 million tons out of a total of 15.0 million tons generated. As previously stated, the expected increase in installed generation capacity resulting from economic growth in the PRC and the corresponding increase in demand for energy and the estimated proportion of coal-fired power generation in the energy mix is expected to further exacerbate the NOx emission-related environmental concerns. According to Frost & Sullivan estimates, as of 2010, denitrification appliances had been installed for only 80,236 MW out of a total installed capacity of 660,775 MW of installed capacity of coal-fired generation in the PRC.

Given the PRC Government's prioritization of this issue and strong policy support, the NOx emissions reduction market is expected to continue to develop rapidly. In July 2009, the Ministry of Environmental Protection issued the *Emissions Standard of Air Pollutants for Fossil Fuel-Burning Power Generation Industry*, which required all newly built or expanded fossil fuel-based power plants to reduce their emissions of NOx to less than 200mg/m^3 or 400mg/m^3, as applicable based on the location of the power plant. All fossil fuel-based power plants are required to comply with these requirements by 2015. Further, in January 2010, the Ministry of Environmental Protection released the *Notice of Fossil-Fired Power Plant NOx Emissions Prevention and Treatment Policy* (關於發佈《火電廠氮氧化物防治技術政策》的通知) which established the framework for the implementation of policies relating to NOx reduction under the 12th Five-Year Plan.

In addition, in July 2011, the Ministry of Environmental Protection and General Administration of Quality Supervision, Inspection and Quarantine (《火電廠大氣污染物排放標準》) issued the Revised Emission Standards. See "Regulations—SO_2 and NOx Emissions Reduction". Under the Revised Emission Standards, except for key regions (where a set of stricter environmental protection standards shall apply), the maximum NOx emissions permitted for coal-fired power plants shall be 100 mg/m³. These requirements will take effect on January 1, 2012 (for new power plants) and July 1, 2014 (for existing power plants). In November 2011, the NDRC announced a new subsidy of RMB0.8 cent per kWh for denitrification which became effective in a selection of 14 PRC provinces starting from December 1, 2011 and is expected to encourage the development of denitrification business in the PRC.

The following table sets out actual historical and future estimates of installed capacity for coal-fired power generation installed capacity for which flue gas denitrification devices have been installed and the installation rate for such devices for the period between 2007 to 2015:

Year	2007	2008	2009	2010	2011E	2012E	2013E	2014E	2015E
Cumulative Installed Capacity of Coal-fired Power Plants with Flue Gas DeNOx Devices (MW)	15,319	21,294	40,284	80,236	176,596	404,297	635,611	870,795	933,000
Cumulative Installed Capacity of Coal-fired Power Plants (MW)	508,162	556,100	604,662	660,775	707,977	758,551	812,738	870,795	933,000
Installation Rate	3.01%	3.83%	6.66%	12.14%	24.94%	53.30%	78.21%	100.00%	100.00%

Sources: Frost & Sullivan, the Ministry of Environmental Protection, China Electricity Council

The major methods of NOx removal are set forth below.

SCR

SCR (Selective Catalytic Reduction) is a NOx removal process which is usually applied to large utilities, industrial boilers, process heaters, and combined cycle gas turbines. This process uses NH_3 to convert NOx into N_2 and water with the assistance of catalysts under an operating temperature of between 320 and 400 degrees Celsius. The SCR process may be applied as a stand-alone reduction method, or combined with other denitrification technologies such as low-NOx burning technology. SCR systems are relatively easy to operate and maintain, and have high NOx removal efficiencies of up to 90% (on a stand-alone basis), which would make it the most efficient NOx removal method for meeting the standards set in the Revised Emission Standards. However, due to the relatively high-cost of such systems, there has been limited application of SCR, as compared to other simple combustion devices and processes such as simple cycle gas turbines, stationary reciprocating internal combustion engines, nitric acid plants and steel mill annealing furnaces.

Low-NOx Combustion

Low-NOx combustion is designed to control fuel and air mixing at the burn-out level in order to create larger and more branched flames, which is believed to reduce peak flame temperatures and reduce the amount of oxygen required, thereby resulting in less formation of NOx and improving burner efficiency. There are three stages in a conventional low-NOx combustion process. In the first stage, combustion occurs in a fuel-rich but oxygen-deficient zone (in order to minimize formation of NOx). In the second stage (reduction), hydrocarbons formed react with NOx formed in the first stage. In the third stage (burn-out), combustion is completed in a managed air environment in order to minimize additional NOx formation. Generally, Low-NOx combustion processes may achieve a removal of between 200mg/m^3 to 400mg/m^3 of NOx.

SNCR

SNCR (Selective None-Catalytic Reduction) is a non-catalyst based NOx emissions control technology, which is generally used as a supplemental process in combination with a SCR or Low-NOx combustion process. SNCR does not utilize catalysts to remove NOx, but works by spraying ammonia into the furnace to enable the ammonia reagentto to come into contact with the flue gas in a specific temperature range. SNCR equipment is relatively low-cost compared to SCR, but its efficiency is only about 30% to 50%.

Effect of Regulatory Changes on the Denitrification Industry

In 2010, the Ministry of Environmental Protection issued the *Thermal Power Industry No Control Technique Policy* (《火電廠氮氧化物防治技術政策》), which requires low NOx combustion methods to be the primary choice for NOx emissions control in coal-fired power plants. In the event the specified NOx emissions standards are not complied with by a coal-fired power plant after applying such methods, the policy requires the power producer to install additional flue gas denitrification equipment. Under the Revised Emission Standards, NOx emissions of coal-fired power plants are to be reduced to less than 100 mg/m^3.

These policy requirements are expected to result in a significant expansion in the market for low-NOx combustion equipment, as power producers are required to comply with such requirements in the stipulated timeframe. The following table sets forth the actual historical and estimated future incremental installed capacities of low-NOx combustion power and market size (based on actual and expected revenue) for the period between 2007 and 2015:

Market for Low-NOx Combustion Systems (2007-2015E)

	2007	2008	2009	2010	2011E	2012E	2013E	2014E	2015E
Low-NOx Combustion									
Low-NOx Combustion New Installation Market (MW) . .	64,362	47,938	48,562	56,113	47,202	50,574	54,187	58,057	62,205
Low-NOx Combustion Retrofit Market (MW)	0	800	5,235	8,845	13,000	46,237	46,237	46,237	0

Source: Frost & Sullivan, China Electricity Council, Longyuan Technology

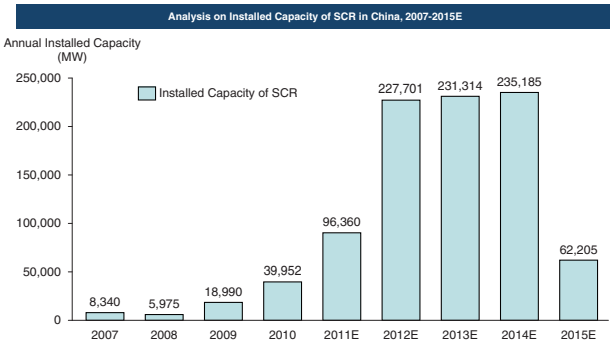
It is expected that currently available low-NOx combustion systems and SNCR appliances applied in combination with such systems will not be able to reduce NOx emissions by the required amount in order for coal-fired power producers to comply with the unit of 100 mg/m^3 specified in the Revised Emission Standards. Accordingly, the market for SCR systems (which has the most effective NOx removal rates amongst all reduction methods) is expected to expand substantially.

The following table sets forth the actual historical and estimated future incremental installed capacities of coal-fired power plants employing SCR processes and market size (based on actual and expected revenue) for the period between 2007 and 2015:

Market for SCR Systems (2007-2015E)

	2007	2008	2009	2010	2011E	2012E	2013E	2014E	2015E
SCR									
Annual Installed Capacity (MW)	8,340	5,975	18,990	39,952	96,360	227,701	231,314	235,184	62,205
SCR for Existing Power Plants . . .	8,340	5,975	18,990	39,952	49,158	177,127	177,127	177,127	0
SCR for New Built Power Plants . . .	0	0	0	0	47,202	50,574	54,187	58,057	62,205

Sources: Frost & Sullivan, the Ministry of Environmental Protection



Sources: Frost & Sullivan, the Ministry of Environmental Protection

The SCR market is also expected to benefit from emission reduction efforts in industry sectors such as iron and steel, petrochemicals and cement production.

Major Business Models in the Flue Gas Desulfurization and Denitrification Industry

Prior to January 2008, most flue gas desulfurization and denitrification appliance installation and facility construction was based on the EPC model. In 2008, the PRC Government launched a pilot plan whereby desulfurization services could be provided by service providers on a concession basis. Since 2008, concession arrangements have become increasingly popular in the industry.

EPC

Under the EPC business model, the service provider designs, manufactures and installs environmental protection appliances and constructs relevant facilities in coal-fired power plants. Under this business model, the service provider is usually in charge of the project design, procurement of the equipment, construction, training and testing through to the transfer of the project and is responsible for the quality of the project. The market has also developed numerous variations based on the general EPC model, such as EP (equipment design and procurement), PC (procurement and construction) and P (procurement) or E and partial P (design and procurement of certain key equipment). Under the EPC business model, the service provider has comparatively small operational risks, with payment being made and revenues recognized at various stages of the project. Upon the completion of a project under the EPC model, customers pay us for the equipment and the design and installation services and assume operational responsibility upon completion.

Concession operations

In 2007, NDRC and Ministry of Environmental Protection jointly promulgated the *Notice of Pilot Plan of Concession of Fossil-Fired Power Plant Flue Gas Desulfurization* (《關於開展火電廠煙氣脱硫特許經營試點工作的通知》), approving service providers who satisfy certain qualifying criteria to provide desulfurization services on a concession basis. The PRC Government has not as yet issued any rules which would allow denitrification services to be provided on a concession basis.

Under the desulfurization concession business model, a desulfurization service provider conducts green field construction of , or acquires from the power plant, the desulfurization equipment. It also owns, operates and maintains the desulfurization equipment as an operator. The duration of the concession contract is identical to the life cycle of the relevant power plant. Since the concession holder is also the operator of the desulfurization operations under the concession business model, the revenues of the service provider comprise mainly (i) of an on-grid tariff subsidy of RMB1.5 cents per kWh for the electricity generated by the power plant and (ii) the sales proceeds of the by-products of the desulfurization process. The concession model has high barriers to entry, with high upfront capital requirements and technical and managerial capabilities required for the construction and operation of the facility. The concession model provides direct incentives for concession operators to continue to research and develop efficiencies in their operations, and the market is therefore expected to have great potential for growth.

The charts below set forth the actual historical and future estimates for installed capacity with FGD for the period between 2007 and 2015 based on the two business models:

FGD Market (2007-2015E)

Segment	2007	2008	2009	2010	2011E	2012E	2013E	2014E	2015E
Total									
Annual Installed Capacity of FGD (MW)	125,295	126,496	99,230	62,935	71,777	75,149	78,762	82,632	62,205
Concession									
Annual New Installed Capacity of FGD by Concession Mode (MW)	0	15,000	5,000	9,070	7,178	15,030	19,690	24,790	21,772
Annual Purchased Capacity of FGD by Concession Model (MW)	0	0	660	11,560	12,716	13,988	15,386	16,925	18,617
Annual Capacity of Concession	0	15,000	5,660	20,630	19,894	29,018	35,076	41,715	40,389

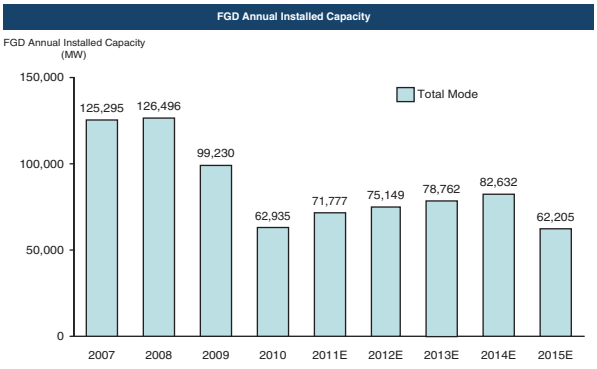
Notes:

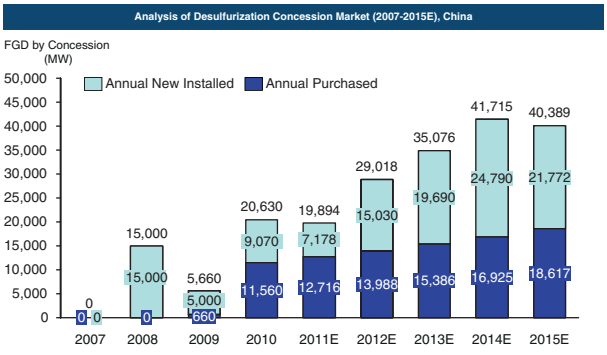
(1) Based on experience from concession pilot projects between 2008 and 2010, the concession model is expected by service providers and power producers to be mutually beneficial and accordingly, many concession contracts were executed in 1H2011, with completion of these installations expected in 2012.

(2) Frost & Sullivan predicts that the concession operations sector will develop rapidly, and it will represent about 35% of the newly installed FGD market by the end of 2015.

(3) As of now, only our Company and Yuanda have commenced concession operations, generally on an intra-group basis.

(4) Annual Purchased Capacity of FGD by Concession Model refers to the capacity of desulfurization equipment that has already been installed at a power plant but has been purchased by desulfurization companies from the power plant during the relevant calendar year for the purpose of carrying on desulfurization concession operations.





Sources: *Frost & Sullivan, the Ministry of Environmental Protection, China Electricity Council*

Competitive Landscape

According to Frost & Sullivan, the top five desulfurization companies providing desulfurization EPC services for PRC's coal-fired power industry by accumulative installed capacity in the PRC and their respective market shares by the end of 2010 (based on the aggregate amount of installed capacity for which they have completed desulfurization projects) are as follows:

Rank	Company Name	Cumulative Installed Capacity (MW)	Market Share	Location
1	**Guodian Technology & Environment Group Corporation Limited**	**68,562**	**12.19%**	**Beijing**
2	Beijing BoQi Electric Power SCI-TECH Co. LTD (BoQi)	45,266	8.05%	Beijing
3	Wuhan Kaidi Electric Power Co., LTD (Kaidi)	40,245	7.15%	Hubei
4	Yuanda Environmental Protection Engineering Co., LTD (Yuanda)	38,145	6.78%	Beijing
5	Insigma Technology Co., LTD (Insigma)	36,025	6.40%	Zhejiang
	Others	334,234	59.43%	
	Total	562,477	100%	

- **The top 5 companies occupied around 40% of the market.**

Sources: Frost & Sullivan, the Ministry of Environmental Protection

According to Frost & Sullivan, the top ten desulfurization companies providing desulfurization EPC services for PRC's coal-fired power industry by newly installed capacity in 2010 and their respective market shares are as follows:

Rank	Company Name	Installed Capacity(MW)	Market Share	Location
1	Fujian Longking Co,. LTD (Longking)	8,610	13.68%	Fujian
2	Yuanda Environmental Protection Engineering Co., LTD (Yuanda)	7,775	12.35%	Beijing
3	**Guodian Technology & Environment Group Corporation Limited**	**5,170**	**8.21%**	**Beijing**
4	China Huadian Engineering Co., LTD (Huadian)	4,870	7.74%	Beijing
5	Beijing BoQi Electric Power SCI-TECH Co,. LTD (BoQi)	2,970	4.72%	Beijing
6	Wuhan Kaidi Electric Power Co., LTD (Kaidi)	2,690	4.27%	Hubei
7	Shanghai Ever Cleaning Environmental Technology Co., LTD (Shanghai Ever Cleaning)	2,400	3.81%	Shanghai
8	Electric Science Research Institute of East-North China (ESRIENC)	2,000	3.18%	Liaoning
9	GCL Engineering Co., LTD (GCL)	1,800	2.86%	Jiangsu
10	China Datang Technologies & Engineering Co,. LTD (Datang)	1,700	2.70%	Beijing
	Others	22,950	36.47%	
	Total	62,935	100%	

Sources: the Ministry of Environmental Protection, Frost & Sullivan analysis

According to Frost & Sullivan, the top five desulfurization concession service providers in the PRC's coal-fired power industry (based on cumulative installed capacity for which desulfurization services are provided under the concession operations business model) respective market shares accounted for more than 90% of the PRC concession operations market and their respective market shares as of June 30, 2011 calculated on that basis, as set out below:

Rank	Company Name	Cumulative Installed Capacity (MW)	Market Share (%)	Location
1	**Guodian Technology & Environment Group Corporation Limited (GDTE)**	**12,630**	**32.30%**	**Beijing**
2	Yuanda Environmental Protection Engineering Corporation Limited (Yuanda)	11,890	30.41%	Beijing
3	Beijing SPC Environment Protection Tech Corporation Limited (SPC)	4,800	12.27%	Beijing
4	Insigma Technology Corporation Limited (Insigma)	4,325	11.06%	Zhejiang
5	China Datang Technologies & ENGINEERING Corporation Limited (Datang)	2,400	6.14%	Beijing
6	Beijing BoQi Electric Power SCI-TECH Corporation Limited (BoQi)	1,920	4.91%	Beijing
7	Fujian Longking Corporation Limited (Longking)	600	1.53%	Fujian
8	China Huadian Engineering Corporation Limited (Huadian)	540	1.38%	Beijing
	Total	39,105	100%	

Source: Frost & Sullivan, China Electricity Council

According to Frost & Sullivan, the market share of top ten providers of denitrification systems based on cumulative installed capacity for which SCR denitrification is utilized accounted for approximately 80% of the PRC SCR market by the end of 2010 as set out below:

Rank	Company Name	Cumulative Installed Capacity(MW)	Market Share	Location
1	SEC-IHI Power Generation Environment Protection Engineering Corporation Limited (SEC-IHI)	12,840	16.00%	Shanghai
2	Dongfang Boiler Group Corporation Limited (Dongfang)	9,992	12.45%	Sichuan
3	China Datang Technologies & Engineering Corporation Limited (Datang)	9,060	11.29%	Beijing
4	**Guodian Technology & Environment Group Corporation Limited**	**8,355**	**10.41%**	**Beijing**
5	Harbin Boiler Corporation Limited (Harbin)	6,440	8.03%	Harbin
6	Hitachi(China) (Hitachi)	5,400	6.73%	Zhejiang
7	Zhejiang University Energy Sources & Technology Corporation Limited (ZJU E & T)	3,600	4.49%	Zhejiang
8	Beijing BoQi Environmental Solutions Technology Corporation Limited (BoQi)	3,300	4.11%	Beijing
9	China Huadian Engineering Corporation Limited (Huadian)	2,650	3.30%	Beijing
10	Tongfang Environment Corporation Limited (Tongfang)	2,250	2.80%	Beijing
	Others	16,349	20.39%	
	Total	80,236	100%	

Source: Frost & Sullivan, the Ministry of Environmental Protection

According to Frost & Sullivan, the market share of the top five providers of denitrification systems based on cumulative installed capacity for which SCR denitrification is utilized accounted for approximately 80% of the PRC SCR market by the end of first quarter of 2011, as set out below:

Rank	Company Name	Cumulative Installed Capacity(MW)	Market Share	Location
1	SEC-IHI Power Generation Environment Protection Engineering Co., LTD (SEC-IHI)	12,840	13.33%	Shanghai
2	**Guodian Technology & Environment Group Corporation Limited**	**11,275**	**11.71%**	**Beijing**
3	Dongfang Boiler Group Co., LTD (Dongfang)	11,192	11.62%	Sichuan
4	Harbin Boiler Co., LTD (Harbin)	10,580	10.99%	Harbin
5	China Datang Technologies & Engineering Co., LTD (Datang)	9,960	10.34%	Beijing
6	Hitachi(China) (Hitachi)	5,400	5.61%	Zhejiang
7	China Huadian Engineering Co., LTD (Huadian)	4,250	4.41%	Beijing
8	Longking Co., LTD (Longking)	3,600	3.74%	Fujian
9	Beijing BoQi Environmental Solutions Technology Co., LTD (BoQi)	3,300	3.43%	Beijing
10	Zhejiang University Energy Sources & Technology Co., LTD (ZJU E & T)	3,200	3.32%	Zhejiang
	Others	20,699	21.50%	
	Total	96,296	100%	

Sources: Frost & Sullivan, the Ministry of Environmental Protection

According to Frost & Sullivan, the top 10 SCR denitrification providers based on newly installed capacity for which SCR denitrification services are utilized and their respective market shares calculated on that basis in 2010, as well as for the period of January to June 2011, are as follows:

Rank	Company Name	Installed Capacity (MW, 2010)	Market Share	Installed Capacity (MW, 2011.01-2011.06)	Location
1	SEC-IHI Power Generation Environment Protection Engineering Co., LTD (SEC-IHI)	9,120	22.83%	4,000	Shanghai
2	Dongfang Boiler Group Co., LTD (Dongfang)	5,692	14.25%	2,500	Sichuan
3	Harbin Boiler Co., LTD (Harbin)	5,240	13.12%	5,000	Harbin
4	China Datang Technologies & Engineering Co., LTD (Datang)	4,200	10.51%	1,920	Beijing
5	**Guodian Technology & Environment Group Co., LTD (GDTE)**	**3,990**	**9.99%**	**6,460**	**Beijing**
6	China Huadian Engineering Co., LTD (Huadian)	1,330	3.33%	1,200	Beijing
7	Zhejiang Tiandi Environmental Protection Engineering Co., LTD (Tiandi)	1,320	3.30%	2,600	Zhejiang
8	Hitachi (China) (Hitachi)	1,200	3.00%	700	Zhejiang
9	Longking Co., LTD (Longking)	1,200	3.00%	700	Fujian
10	Yuanda Environmental-Protection Engineering Co., LTD (Yuanda)	960	2.40%	1,200	Chongqing
	Others	5,700	14.27%		
	Total	39,952	100%		

Sources: Frost & Sullivan, the Ministry of Environmental Protection

Entry Barriers to Desulfurization and Denitrification Services Market

Project experience

Expertise and previous experience in the design and construction of desulfurization projects in the PRC is a key barrier to entry in the concession operations market. Such experience allows the service provider to more accurately assess the specific situational requirements for each project and adopt appropriate pollutant reduction methods to optimize plant efficiencies on a cost-effective basis, taking into account safety and stability considerations based on the operational conditions of each plant. In addition, such experience is also useful when undertaking economic viability assessments and for financial planning purposes, since the service provider is required to fund the project construction, development and ongoing operations.

Capital requirements

Capital requirement is a significant entry barrier for the desulfurization concession market. Concession operation projects require extensive initial capital investments to be made by service providers as compared to EPC projects, as service providers do not receive staged completion payments at each construction stage but rely on future revenues from the completed project to achieve a return on their investments in a particular project. Under the concession model, the service provider takes on the risks of ownership of the facilities and operating risks, and the recovery of project costs will take place over a longer period since any such recovery is based on price subsidies set by the PRC Government payable on energy generated from the power plant, and can only be realized after the power producer has transferred the relevant amounts received by it to the service provider. Accordingly, service providers wishing to enter the concession services market must have ready access to financing and sufficient capital resources over the time period required for the completion of such projects, since no revenues will be realized until the project is completed and has commenced operations.

Qualification credentials

According to the *Engineering Design Qualification Credential Standard* (《工程設計資質標準》) and the *Standard of Qualification Credential Grade of Enterprises in the Construction Industry* (《建築業企業資質等級標準》), it is a requirement to obtain relevant qualification credentials for a company to conduct design or general contracting work for SO_2 and NOx emissions reduction projects. Criteria for granting such qualification credentials include good will, technological specifications and equipment, and levels of management capacity of a company. Further, such qualification credentials are classified into different grades with varying limitations on the scale of projects that the company holding the qualification credentials may carry out. Emissions reduction companies must operate within the limits of their qualification credentials.

THE ENERGY CONSERVATION INDUSTRY IN THE PRC

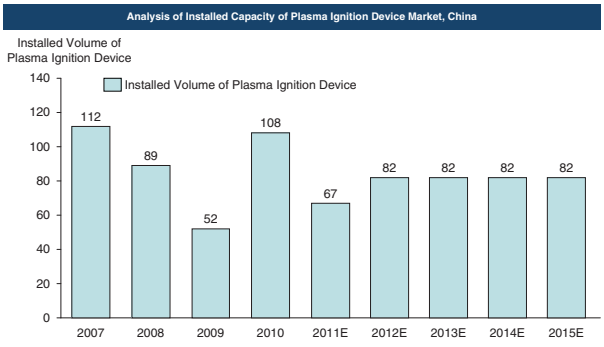
The primary method for the conservation of energy adopted in the PRC for coal-fired power plants is plasma ignition combustion stabilization (PICS). A PICS coal-fired power plant relies wholly on the PICS system to start and stabilize the combustion of coal during its

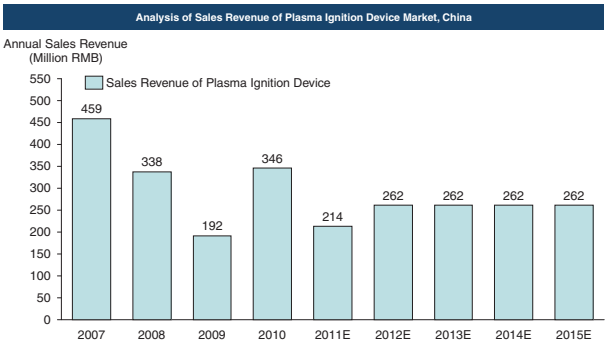
operations, and eliminates the need for fuel resources such as oil and fuel related facilities and appliances such as oil tanks and fuel transportation systems. The PICS system offers significant cost-saving benefits for both existing and new power plants by reducing fuel expenses related to the ignition and combustion process, as well as installation, maintenance and service expenses relating to fuel storage and pipeline operations.

The PRC Government encourages use of the PICS system as one of its energy conservation and pollution reduction measures for the coal power industry in the PRC, which has resulted in the rapid growth of the PICS system manufacturing industry. The following tables set forth historical growth data and future estimates for the PICS system for the period between 2007 and 2015E:

	2007	2008	2009	2010	2011E	2012E	2013E	2014E	2015E
Plasma Ignition Device									
Annual Installed Volume (Unit)	112	89	52	108	67	82	82	82	82
Price (Thousand RMB/Unit)	4,100	3,800	3,700	3,200	3,200	3,200	3,200	3,200	3,200
Revenue (Million RMB, including VAT)	459.2	338.2	192.4	345.6	214.4	262.4	262.4	262.4	262.4

Source: Frost & Sullivan, Longyuan Technology





Source: Longyuan Technology, Frost & Sullivan

The table below sets forth the actual historical and projected estimates of the number of plasma ignition devices installed in China for the period between 2007 and 2015E, including installation rates:

Year	2007	2008	2009	2010	2011E	2012E	2013E	2014E	2015E
Number of Plasma Ignition Devices	397	486	538	646	713	795	877	959	1,041
Number of Boilers in Coal-fired Power Plants in China	1,222	1,337	1,454	1,588	1,702	1,823	1,954	2,093	2,243
Installation Rate	32.50%	36.36%	37.01%	40.67%	41.90%	43.60%	44.89%	45.81%	46.42%

Sources: Longyuan Technology, Frost & Sullivan

Key factors driving the development of the PICS industry include strong policy support from the PRC Government, economic and production efficiencies, reduction of reliance on fuel oil and fuel-oil related expenses and the reduction in capital investments required for fuel facilities such as oil depots for each power project. As a result of these factors, Frost & Sullivan believes that the PICS market has great growth potential in the short term.

The tables below show the ranking and market share of major players in the PICS industry in the PRC:

By cumulative installed volume:

Rank	Company Name	Volume (Unit, 2010)	Market Share	Location of Principal Manufacturing Facility
1	**Guodian Technology & Environment Group Corporation Limited**	614	95.05%	Shandong
2	Wuhan Tianhe Technology CO., LTD	22	3.41%	Wuhan
3	Xuzhou Combustion Control Technology CO., LTD	10	1.55%	Jiangsu

By volume installed in 2010:

Rank	Company Name	Volume (Unit, 2010)	Market Share	Location of Principal Manufacturing Facility
1	**Guodian Technology & Environment Group Corporation Limited**	101	93.52%	Shandong
2	Wuhan Tianhe Technology CO., LTD	6	5.55%	Wuhan
3	Xuzhou Combustion Control Technology CO., LTD	1	0.93%	Jiangsu

By sales revenue in 2010:

Rank	Company Name	Sales Revenue (Million RMB, 2010)	Market Share	Location of Principal Manufacturing Facility
1	**Guodian Technology & Environment Group Corporation Limited**	323.2	93%	Shandong
2	Wuhan Tianhe Technology CO., LTD	19.2	5.94%	Wuhan
3	Xuzhou Combustion Control Technology CO., LTD	3.2	1.06%	Jiangsu

Source: Frost & Sullivan

Energy Management Contract

Energy management contract ("**EMC**") is a business model that allows power producers to achieve energy conservation without incurring upfront capital investment costs. It is essentially a partnership between the power producer and the energy service company, or the ESCO, which is responsible for carrying out the energy conservation project. The ESCO designs and constructs the project based on agreed specifications and guarantees a specified level of energy conservation costs. Profit sharing is a factor in deciding the pricing structure such that the contract price that the ESCO is entitled to and is paid during the course of the contract period relates to the energy conservation costs achieved by the power producer.

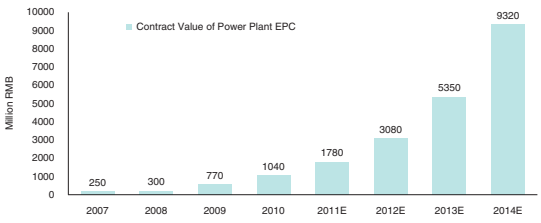
THE EMC market in China

The PRC Government has implemented a series of policies supporting the development of the EMC market, such as the *Medium and Long-term Plans of Energy Conservation* promulgated by the NDRC in 2004, which set forth goals and work objectives for the prioritization and promotion of energy conservation in high energy consumption

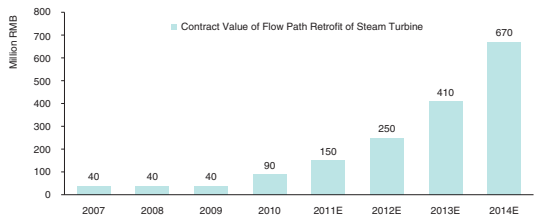
sectors. The Energy Conservation Law of the PRC (the "**Energy Conservation Law**"), as amended on October 28, 2007, states that the PRC Government will support the development of the EMC market. In addition to this, under the *Opinions on Accelerating to Promote Energy Management Contract to Facilitate the Development of Energy Saving Service Industry* (《關於加快推行合同能源管理促進節能服務產業發展意見的通知》) issued on April 2, 2010, the PRC Government will implement policies and measures promoting the development of the EMC market, including providing financial support, tax benefits and financial services. On June 3, 2010, the NDRC and the Ministry of Finance jointly issued the *Interim Measures on Financial Incentive Funds for Energy Management Contract Projects* (《合同能源管理項目獎勵資金管理辦法》), which provides for financial incentives to be applied to energy conservation service providers. These policies and related financial incentives and tax benefits are primary drivers of growth in the EMC market for energy conservation services.

As a result, the EMC market has expanded significantly and is expected to continue to grow. The following tables set forth historical and estimated market size of the EMC sector from 2007 to 2014E.

Annual Contract Value of Power Plant EMC Market (China), 2007-2014E



Annual Contract Value of Flow Path Retrofit of Steam Turbine Market (China), 2007-2014E



Source: *Frost & Sullivan*

The following table shows major PRC EMC market participants and their respective market shares based on contract values in 2010:

Rank	Company Name	Contract Value (Million RMB, 2010)	Market Share
1	**Guodian Technology & Environment Group Corporation Limited**	204	19.7%
2	Beijing Shenhua Zhongji Energy Environment Technology Co, Ltd. (Shenhua Zhongji Energy)	170	16.4%
3	Tychon Electric Co., Ltd. (Tychon Electric)	130	12.5%
4	CIEBO Group Investment Holdings Co., Ltd. (Ciebo)	110	10.6%
5	Shanghai Lianxin Environmental Investment Co, Ltd. (LX Investment)	100	9.7%
	Others	322	31.1%
	Total	1036	100%

The following chart shows major PRC steam turbine flow passage retrofitting EMC market participants and their respective market shares in 2010.

Rank	Company Name	Contract Value (Million RMB, 2010)	Market Share
1	**Guodian Technology & Environment Group Corporation Limited**	56	60.2%
2	Shanghai Lianxin Environmental Investment Co, Ltd. (LX Investment)	25	26.9%
3	Tychon Electric Co., Ltd. (Tychon Electric)	12	12.9%
	Others	0	0
	Total	93	100%

Source: Frost & Sullivan

THE RENEWABLE ENERGY EQUIPMENT MANUFACTURING AND SERVICES INDUSTRY IN THE PRC

Wind Power Resources

Wind power resources are mainly concentrated on the northern and western coasts of Europe and part of the Mediterranean, eastern Asia, coastal and certain inland regions of Africa and coastal areas in Australia, North America and South America. However, it is expected that the majority of growth in this sector will be attributable to the development of wind resources in developing countries. The Global Wind Energy Outlook by GWEC forecasts that more than 40% of the growth in global wind power installation by 2020 will be contributed by developing countries in regions such as Asia, Latin America, Africa and Middle East.

The key markets for wind energy are currently the PRC, the U.S., Germany, Spain and India, with much of future growth expected to be driven by development in the PRC, the United States and India. The following table sets forth estimates by Garrad Hassan for wind-powered generation facilities onshore and offshore for the period between 2010 and 2015E and estimates of CAGR for the five key markets for this period:

Newly Installed Capacity (MW)

Country	2010	2011E	2012E	2013E	2014E	2015E	2010 – 2015E CAGR
China	44,733	59,733	74,733	89,733	104,733	119,733	22%
U.S.	40,201	45,681	53,681	61,906	74,018	88,106	17%
Germany	27,155	28,045	28,864	29,902	31,196	32,958	4%
Spain	20,676	22,210	22,927	23,927	24,942	26,041	5%
India	13,064	15,106	17,348	20,090	22,832	25,677	14%

The PRC has abundant wind power resources. According to the China's 3rd Wind Power Resource Assessment 2009, the PRC's recoverable onshore and offshore wind power resources amount to an aggregate of 22,580 MW. The PRC's wind resource reserves are estimated to be the second largest globally, next to that of the U.S. and much larger than those of India, Germany and Spain.

By the end of 2010, the PRC was the largest wind energy market based on incremental and cumulative installed capacity. Estimates indicate that by 2030, wind

resources are expected to become the third largest supply of power in the PRC, after coal and hydroelectric power generation. The PRC's wind resources are predominantly located in the northeast, north and northwestern regions of the PRC but are generally wide-spread over coastal areas as well as certain inland regions.

Wind resources in a particular region are generally classified as one of four categories under the International Electrotechnical Commission (IEC) standards based on windspeeds[1]. The majority of China's onshore sites are Class II sites (predominantly Inner Mongolia) and Class III sites (Gansu, Hebei, Heilongjiang, Jilin and Liaoning). Class I sites are located in a small region in Inner Mongolia, although certain offshore and inter-tidal areas of the southeastern Chinese coastal provinces have been reported as having gust values in excess of the Class I thresholds.

The following tables sets forth the proportion of total land area in the PRC which is suitable for additional wind power installation grouped by category:

IEC Class	Percentage of land area
Above Class I	5%-10%
Class I	5%-15%
Class II	5%-15%
Class III	60%-80%

Source: Garrad Hassan

Wind Power Generation

Wind power is currently the fastest growing renewable energy resource in the world due to cost efficiency, resource availability and advancements in wind technology. According to Garrad Hassan, global installed capacity for wind power generation has grown at a tremendous pace in recent years, at a CAGR of 24% for the period between 2006 and 2010.

The following table presents historic wind power capacity growth compared with other sources of energy generation.

	Installed Capacity (Electricity Generation)			Annual Energy Production (Electricity Generation)		
Year	Wind Energy Capacity (GW)[1]	All Energy Capacity (GW)[3]	Share of Wind Energy Generation	Wind Generation (TWh)[2]	All Generation (TWh)[3]	Share of Wind Energy Generation
2006	74	4,344	1.7%	175	18,921	0.9%
2007	94	4,509	2.1%	222	19,756	1.1%
2008	120	4,719	2.5%	285	20,183	1.4%
2009	159	4,895	3.2%	375	20,905	1.8%
2010	197	5,071	3.9%	466	21,480	2.2%
CAGR (2006 – 2010)	**24.1%**	**3.9%**		**24.1%**	**3.2%**	

Source: Garrad Hassan

Notes:

(1) Capacity figures are sourced from GWEC with an adjustment to 2010 figures according to updated information from national wind energy associations

[1] Class I corresponds to winds speeds with an annual mean wind speed at turbine hub height of 10 m/s or less, a ten minute gust of 50 m/s or less, or a 3-second gust (base on a gust ratio of 1.4) of 70 m/s or less. The corresponding values for a Class II site are 8.5 m/s, 42.5 m/s and 59 m/s, and for a Class III site are 7.5 m/s, 37.5 m/s and 52.5 m/s.

(2) Wind generation is based on Garrad Hassan experience with an estimated average global capacity factor of 27 %
(3) All generating capacity and all generation figures are based upon the U.S. Energy Information Administration (EIA) for years 2002 and 2003 and the International Energy Agency (IEA) World Energy Outlook for 2004 to 2008 with interpolation from 2008 figure to 2010 based upon 2015 "New Policies Scenario". 2005 all energy capacity has been estimated from the all generation figure.

It is expected that wind powered installed capacity will grow rapidly over the next five years. Based on figures provided by the Global Wind Energy Council (GWEC) and adjusted for updates from specific national wind industry associations, Garrad Hassan estimated that approximately 39 GW of additional capacity was installed in 2010, bringing total worldwide installed capacity to 197 GW by January 2011. Between 2010 and 2015E, Garrad Hassan expects a global CAGR of approximately 16%, assuming steady growth in the Chinese wind market as compared to 2005 to 2010, and the United States experiencing growth consistent with 2009 levels. The following table presents the Garrad Hassan forecast of growth in wind power installation between 2010 and 2015E:

	Cumulative installed capacity estimation (MW)						10 – 15E
Region	**2010**	**2011E**	**2012E**	**2013E**	**2014E**	**2015E**	**CAGR**
Europe[1]	86,423	96,408	106,304	117,206	129,377	142,163	10%
Americas	46,200	54,055	65,335	76,790	92,433	110,298	19%
Rest of Asia[2]	16,416	19,233	22,595	26,628	30,692	34,741	16%
China	44,733	59,733	74,733	89,733	104,733	119,733	22%
Africa	994	1,444	2,489	3,714	5,319	6,398	47%
Pacific[3]	2,398	3,098	3,848	4,648	5,498	6,398	22%
Total[4]	**197,165**	**233,971**	**275,304**	**318,719**	**368,053**	**420,167**	**16%**

Source: Garrad Hassan

Notes:
(1) Europe figure includes all installation in Russia and Turkey
(2) Rest of Asia figure includes Middle East but not China, Russia or Turkey
(3) Pacific figure includes Australia, New Zealand and Pacific Islands
(4) Cumulative total by year-end

China Wind Power Generation

According to the Chinese Wind Energy Association (CWEA) in 2010[1], the PRC installed almost 19 GW of wind turbine capacity making it the leading country in respect of annual incremental and cumulative installation globally. However, this figure included a substantial amount of installed capacity which had yet to be connected to the power grid at the end of 2010. The table below presents annual and cumulative installed wind generating capacity from 2006 to 2010 in China.

Year	Annual Installed Capacity(1) (MW)	Cumulative Installed Capacity (MW)	Year on year cumulative capacity growth
2006	1288	2,555	101.7%
2007	3311	5,866	129.6%
2008	6,154	12,020	104.9%
2009	13,803	25,805	114.7%
2010	18,928	44,733	73.4%
CAGR (2006 – 2010)			104.6%

Source: Chinese Wind Energy Association (CWEA)

Note:

(1) Annual Installed capacity is gross and not net of any repowering or decommissioned turbines.

Despite the newly introduced regulations and stricter technical standards for the purpose of stabilizing and maintaining the healthy development of the wind power industry, Garrad Hassan predicts that new wind capacity in China will continue to grow within a range of 12-15 GW per annum during the next four to five years at a more sustainable developmental pace.

1 CWEA describes their methodology for deriving installation statistics as follows:

a. During the period from December 2010 to March 2011, CWEA carried out a survey of new wind turbine installations in Chinese market during 2010. The information was derived from wind turbine manufacturers. To ensure the precision of the statistics, CWEA cross- checked the projects' information with the local NDRC and wind developers. For some projects, CWEA also undertook site visits to verify the project information.

b. The installed capacity shown in the statistic refers to the capacity which has been constructed. This is different from grid-connected capacity and commercially operational capacity.

c. It is noted that the figures in the statistics have been verified with developers and the NDRC. However the figures may differ in places from those offered by developers and government bodies due to differences in time period and data source., China installed almost 19 GW of wind turbine capacity making it the leading nation for annual and cumulative installation globally; however this figure does include a substantial level of installations that were yet to be connected to the grid by the year end.

Leading Wind Farm Operators in China

The Following table sets forth the PRC's leading wind farm operators by total installed capacity at the end of 2010 and their respective percentages of the PRC's total wind installed capacity in 2010.

	2010 New Installed Capacity (MW)	End 2010 Cumulative Installed Capacity (MW)	Cumulative Percentage of China Wind Power Capacity
China Guodian Corporation[1]	3,491	8,941	20.0%
China Huaneng Group	3,171	6,331	14.2%
China Datang Corporation	2,268	5,620	12.6%
China Guangdong Nuclear Power Holding Co. Ltd.	1,017	2,364	5.3%
China Huadian Corporation	925	2,557	5.7%
Guohua Corporation	897	2,346	5.2%
China Power Investment Corporation	772	1,708	3.8%
China Resource Power Holdings Co. Ltd.	586	977	2.2%
Others	5,802	13,889	31.0%

Source: CWEA, Garrad Hassan

Note:
(1) China Guodian Corporation owns Longyuan Power and GD Power.

The Wind Turbine Manufacturing Industry

Market concentration of wind turbine producers is relatively high, due to significant barriers to entry in the manufacturing sector, with the top five manufacturers accounting for over 70% of the domestic PRC market.

The table below presents the top ten wind turbines manufacturers based upon aggregated 2010 new installation data for the markets of the PRC, North America (U.S. and Canada), Europe's largest five markets (Germany, Spain, Italy, France and the U.K) and India.

Manufacturer	Country of Manufacturer	Installed Capacity for 2010 in top 9 markets[1],[2] (MW)	2010 Market Share in top 9 Markets[1],[2]
Sinovel Wind Group Co., Ltd.	China	4,386	13%
Goldwind Science & Technology Co., Ltd.	China	3,735	11%
Vestas Wind System A/S	Denmark	3,290	10%
General Electronic Company	U.S.A	2,863	9%
Dongfang Turbine Co., Ltd.	China	2,624	8%
Gamesa Corporatión Tecnológica, S.A.	Spain	2,334	7%
United Power	China	1,643	5%
Enercon Services Inc.[3]	Germany	1,635	5%
Siemens Ltd.	Germany	1,405	4%
Suzlon Energy Limited	India	1,275	4%

Source: National Wind Energy Associations, Deutsches Windenergie-Institut (DEWI), Centre for Wind Energy Technology and Garrad Hassan

Notes:
(1) China, US, India, Germany, Spain, Italy, France, UK, Canada
(2) Figures provided for India cover the period April 2009 to March 2010
(3) Figure does not include Enercon-India

The following table presents the market share for 2010 new installations by the top ten manufacturers of wind turbines in the PRC.

Manufacturer	Country of Manufacturer	2009 New Installed Capacity (MW)	2009 Market Share	2010 New Installed Capacity (MW)	2010 Market Share
Sinovel Wind Group Co., Ltd.	China	3,495	25.3%	4,386	23.2%
Goldwind Science & Technology Co., Ltd.	China	2,722	19.7%	3,735	19.7%
Dongfang Turbine Co., Ltd.	China	2,036	14.7%	2,624	13.9%
United Power	**China**	**768**	**5.6%**	**1,643**	**8.7%**
Guangdong Mingyang Wind Power Industry Group Co., Ltd.	China	749	5.4%	1,050	5.5%
Vestas Wind System A/S	Denmark	609	4.4%	892	4.7%
Shanghai Electric Windpower Equipment Co., Ltd.	China	281	2.0%	598	3.2%
Gamesa Corporación Tecnológica, S.A.	Spain	276	2.0%	596	3.1%
HARA XEMC Windpower Co., Ltd.	China	454	3.3%	507	2.7%
China Creative Wind Energy Co., Ltd.	China	164	1.2%	486	2.6%
Total		**11,554**		**16,517**	

Source: CWEA

The following table shows the top ten WTG manufacturers based on cumulative installed capacity in China as of the end of 2010.

Manufacturer	End 2010 Cumulative Installed Capacity[1] (MW)	Market Share
Sinovel	10,025	22.4%
Goldwind	9,075	20.3%
Dongfang	5,950	13.3%
Vestas	2,900	6.5%
United Power	**2,425**	**5.4%**
Gamesa	2,425	5.4%
Mingyang	1,925	4.3%
GE	1,175	2.6%
SEwind	1,075	2.4%
XEMC	1,075	2.4%

Source: CWEA

Note:
(1) Capacity figure estimated from market share, rounded to nearest 25MW

The following table presents the product type and technology of the wind turbine models currently produced by the major Chinese domestic wind turbine manufacturers.

Manufacturer	Turbine model ID	Turbine Size	Source of technology
Sinovel	SL1500/70/77/82	1.5 MW	Fuhrländer License(1)
	SL3000/90/100/105/113	3.0 MW	Joint Development with Windtec
	SL5000/126	5.0 MW	Joint Development with Windtec
	SL6000/128	6.0 MW	Joint Development with Windtec
Goldwind	S48/50	0.75 MW	REpower License
	GW70/77/82/87	1.5 MW	Vensys(2)
	GW90/100	2.5 MW	Joint Development with Vensys
	GW100	3.0 MW	In-house
	GW6MW series(6)	6.0 MW	In-house
Dongfang	FD60/64	1.0 MW	In-house
	FD70/77/82/89	1.5 MW	REpower License
	FD82/93/100	2.0 MW	In-house
	FD90/100	2.5 MW	Joint Development with Windtec
	FD90/100/115(6)	3.0 MW	Joint Development with Windtec
	FD127/140(6)	5.5 MW	Joint Development with Windtec
Guodian United Power	UP1500/70/77/82/86	1.5 MW	Joint Development with Aerodyn(3)
	UP2000/96	2.0 MW	In-house
	UP3000/100/108 DFIG	3.0 MW	Joint Development with GHP(4)
	UP3000/100/108 DD(6)	3.0 MW	Joint Development with HRS(5)
	UP6000/136(6)	6.0 MW	In-house
Mingyang	MY1.5/1.5s/1.5se	1.5 MW	Aerodyn(3)
	MY2.5MW SCD	2.5 MW	Aerodyn(3)
	MY3.0MW SCD	3.0 MW	Aerodyn(3)
SEwind	SEC62/64/70	1.25 MW	Dewind License
	SEC87/93	2.0 MW	Joint Development with Aerodyn
	SEC116/112	3.6 MW	In-house
XEMC	XE72/82/87/93-DD	2.0 MW	Zephyros(7)
	XE/DD115/128	5.0 MW	Darwind(8)

Source: Public domain and GL GH research.

Notes:

(1) Fuhrländer acquired design from Windtec.
(2) Goldwind purchased 70% share of Vensys in 2008.
(3) Aerodyn Energiesysteme GmbH.
(4) GHP: Garrad Hassan and Partners Ltd.
(5) HRS: HRS Wind Power Technologies Ltd.
(6) Under development.
(7) Harakosan purchased Zephyros in 2005. XEMC established a JV with Harakosan in 2006 which Harakosan exited in 2008 through a disposal of its interest in the JV.
(8) XEMC purchased Darwind in 2009.

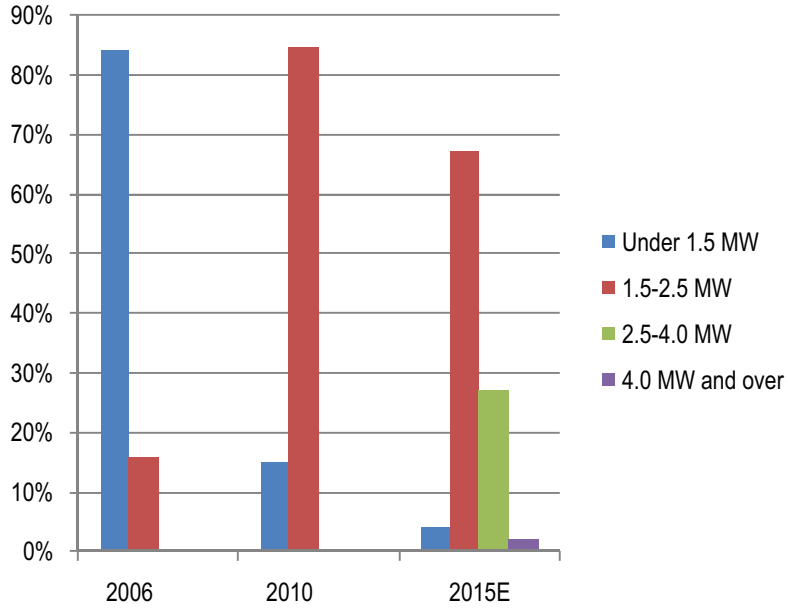
Characteristics of the Wind Turbine Manufacturing Industry in the PRC

In recent years, the PRC Government has highlighted production issues in the wind power equipment industry, stressing that it continues to support the development of wind power but highlighting concerns over production standards and innovation quality. As a result of these concerns, the PRC Government shifted its focus from large scale and rapid roll-out of wind installed capacity to greater emphasis on technological research and development, innovation and production capabilities to transform the wind turbine industry from a traditional manufacturing based industry, based on technological developments by other global players, to a dynamic, technology driven and innovation focused industry.

The maturity of the PRC wind power industry has also resulted in shifts in demand trends. As wind farm operators and investors become more sophisticated, focus has shifted from price to quality-to-price ratios in the wind turbine manufacturing industry, taking into account efficiency, reliability and maintenance costs of wind turbines, as well as maintenance and service capabilities and quality of after-sales services. Reliability and quality have therefore increased in importance, and wind turbine manufacturers are increasingly required to focus on the reliability and quality of their product and after sales service in order to retain and grow market share.

In addition, the average size of wind turbine systems is continuing to increase, with a preference for larger turbines being evidenced by customer demand. Newly installed wind turbine generation systems typically now exceed 1.6 MW, and made up 86.9% of newly installed wind turbines in 2010, an increase of 17.9% as compared to 2009. Manufacturers are focusing on the development and manufacture of wind turbines models ranging between 1.5 MW, 3 MW, 5 MW, 6 MW and 10 MW.

According to Garrad Hassan, in the past two years 1.5 MW turbine models, offered by all five major domestic suppliers (Goldwind, Sinovel, Dongfang, United Power and Mingyang), become the dominant size turbine in the PRC market. While larger turbines are becoming more popular and many are under development, this mid-size 1.5 to 2.5 MW is expected to retain a majority position in the market for the next few years as indicated by the estimation for 2015 provided in the chart below.



Source: Garrad Hassan

Note: Market share provided as a percentage of number of turbines installed.

Turbine Average Selling Price

The Average Selling Price (ASP)[1] of wind turbines in the Chinese market saw a rise between 2004 and 2008 to over RMB 6 million/MW as installations ramped up in a seller's market. However prices have declined steadily since then, as competition among manufacturers has increased and a buyer's market has emerged. 2011 has seen reports of prices as low as RMB 3.2 million/MW. The exact price offered typically depends upon the size of the order, and the warranty provisions. The sustainability of these low prices has caused some concern in the marketplace. Although some large projects may achieve lower prices in particular circumstances, it is considered unlikely that sustained further reductions during 2011 to 2015 are achievable. The main reasons are:

- technical standards are becoming more onerous, which will require more design, product development, testing and verification effort;
- the industry growth will require further investment in R&D, quality control, and services as well as warranty provisions; and
- raw material price trends are expected to trend upwards.

Wind turbine prices in North America and Europe are currently significantly higher than in China. This may be partly because project size (for onshore projects) is generally smaller

1 ASP is assumed here to mean the price of a turbine rotor and nacelle, but excluding tower, shipping, installation and associated costs such as customs or VAT

than in the PRC, and also because technical requirements are generally more onerous. Price trends are highly influenced by the relative balance between supply-chain capacity and turbine demand, at least in the short term.

Offshore Wind Power

At present, as shown in the table below, the vast majority of commercial offshore wind energy installations in the world are currently located in European waters. However, while aggressive expansion plans are in place in Europe, most notably in the UK and Germany, 2010 also saw the installation and commissioning of the first major non-European wind farm with the 102 MW Donghai Bridge project near Shanghai, the PRC.

The "Round 3" series of site concessions awarded by the UK Government in early 2010 for a potential capacity of over 30 GW signaled a step-change in the scale of offshore wind farm development. Following delays due to fine-tuning of its financial support mechanism to provide sufficient incentives to development, Germany is now also set to see significant build-out in offshore wind development. The PRC Government announced plans at the provincial and national level with targets amounting to over 30 GW of installed capacity by 2020 (although the short-term pace of development prior to the end of 2015 is now looking slower than the aggregated 13 GW of installations previously cited at the provincial level). The first major tender for site concessions worth 1 GW of capacity were awarded in late 2010 to four projects located in Jiangsu. It is noted that these projects and the associated targets include substantial inter-tidal development areas. In contrast, delays and lack of political support have impacted the nascent North American offshore market and only a minor contribution to global build is expected from this continent through the next five years.

The following table presents the Garrad Hassan estimated growth in offshore wind power installation from 2010 to 2015:

	Cumulative installed capacity estimation (MW)						10 – 15E
Region	**2010**	**2011E**	**2012E**	**2013E**	**2014E**	**2015E**	**CAGR**
Europe(1)	2,766	3,538	4,561	6,547	9,586	13,879	38%
Americas	0	0	0	51	372	606	N/A
China(2)	140	710	1,480	2,188	3,308	5,483	108%
Rest of Asia(3)	11	11	11	299	544	728	131%
Total	**2,917**	**4,259**	**6,052**	**9,085**	**13,810**	**20,696**	**48%**

Notes:
(1) Europe figure includes all installation in Russia and Turkey
(2) China figures include a substantial share from inter-tidal wind farm developments
(3) Rest of Asia figure includes Middle East but not China, Russia or Turkey

However, as the operating environment of offshore wind farms is generally more critical than that of onshore wind farms, with strong offshore winds, seawater corrosion and strong waves, installation and operation of offshore wind turbine generators are more complicated than onshore wind turbine generators.

Entry Barriers

Operation record and product quality

The designed operational life of a wind turbine generator is usually 20 years and the initial investment cost of purchase is high. Therefore, buyers are very cautious when selecting wind turbine generating system manufacturers, and historic sales is considered as a reliable indicator for evaluating the quality of wind turbine generating system and the manufacturers' capabilities. In general, the performance parameters of the products of a WTG manufacturer with a track record over a comparatively long operating history are supported by a large quantity of data and therefore are well positioned to gain customer confidence. Furthermore, those manufacturers are also experienced in resolving technical issues encountered during the operation of wind power equipment and maintenance of the same, and therefore possess competitive advantages.

Talent

The design and manufacture of large wind turbine generating system is a process involving various technologies including aerodynamics, multi-body dynamics, simulation technology and detection technology. In order to develop a series of wind turbine generating systems that are suitable for different geographical conditions, wind turbine generating system manufacturers must be equipped with practical experience and technical expertise. Because of the scarcity of experienced technicians in the wind turbine manufacture industry and the industry's reliance on such human resource, the core technological capability of a manufacturer lies in its talent.

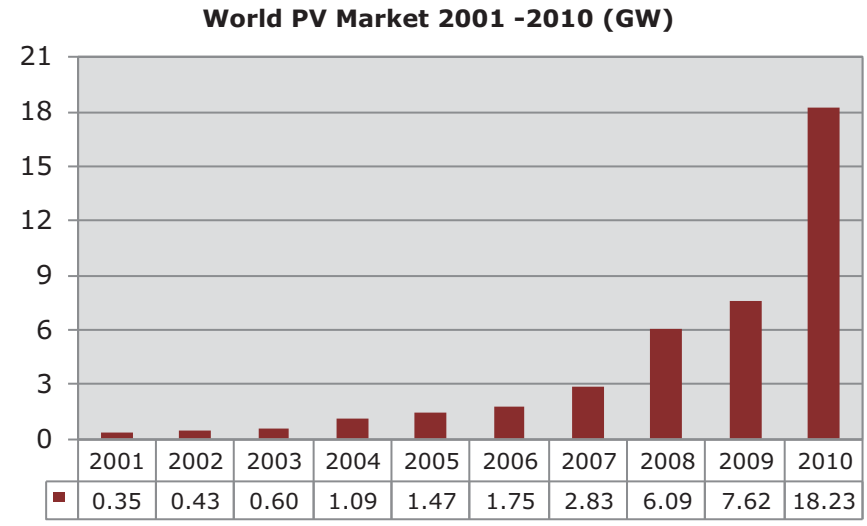
Integrated supply chain

A wind turbine generating system consists of many parts and components of various types and sizes, the supply of which determines the production capability of the wind turbine manufacturer. A manufacturer who has a greater degree of control of the integrated vertical supply chain possesses significant competitive advantages. Many wind turbine manufacturers obtain their parts and components through a long-term cooperation with third party suppliers. A few manufactures have in-house capabilities to develop and produce key parts and components and hence have greater control over the development of the next generation of wind turbine generating systems. For manufacturers with in-house capabilities of design and manufacture of key parts and components, their profit margin may be improved and they may be better protected against the interruption of production caused by price fluctuation or shortage of supply of the parts and components.

World Photovoltaic Power Generation

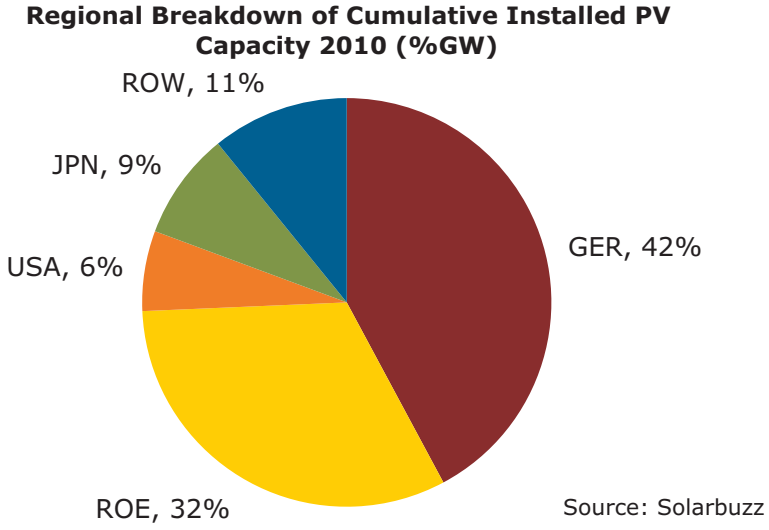
PV market[1] is one of the most rapidly developed markets in renewable energy, and has enjoyed a great increase in the past decade. According to Marketbuzz, in 2010, the world PV market increased to 18.23 GW from 7.62 GW in 2009, growth of a remarkable 139% over the year, compared to 25% growth in the previous year. Annual growth has now averaged a compound rate of 80% since 2006. The major driver for such rapid development is the favorable policy in grid-connected power generation.

[1] "PV market" is used in this section to relate to the volume of modules delivered to installation sites, including modules awaiting installation or grid-connection, where applicable. The total market is comprised of both grid-connected installations and off-grid applications.



Source: Solarbuzz

In 2010, the worldwide on-grid segment grew by 143% (up from 26% growth in 2009) to 17.85 GW. This resulted mainly from the combined impact of rapid growth in Europe aligned with continued grid-connect market expansion in the U.S., Japan, and the PRC. Since 2006, the on-grid segment has shown a compound annual growth rate of 84%.



Source: Solarbuzz

Solarbuzz predicts three potential outcomes for the global solar installed capacity growth for the period 2011 to 2015. The three potential outcomes are respectively named "Balanced Energy", "Green World" and "Production Led" scenarios. The key differences between the three scenarios are assumptions about each market's policy environment and assumptions about the rate of growth in PV production capacity. The table below sets out characteristics of the three scenarios:

Forecast Scenario Characteristics: Inputs and Outputs

Key Inputs:	Balanced Energy	Green World	Production Led
Government Policies	Positive to PV	Very Positive to PV	Very Positive to PV
PV Production Capacity	Constrained Growth	Constrained Growth	Aggressive Growth
Strategic Outcomes:	**Balanced Energy**	**Green World**	**Production Led**
Market Demand	Modest Growth	Strong Growth	Very Strong Growth
End-Market Prices	Rapid Decline	Low Rate of Decline	Very Rapid Decline

Source: Solarbuzz

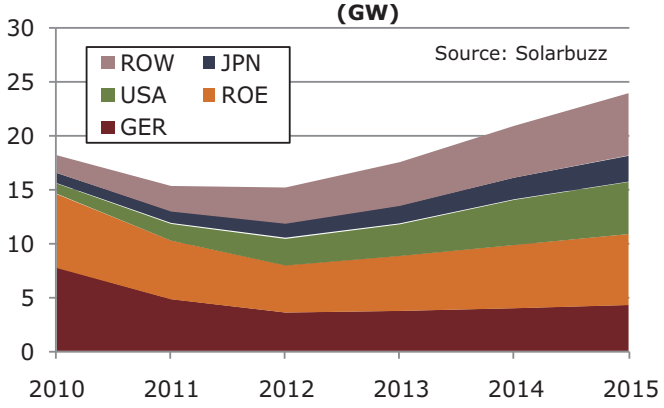
The following table presents world market demand forecasts (2011–2015) in accordance with Scenarios (GW), according to Solarbuzz.

2010	World Market (GW)	2011	2012	2013	2014	2015
18.23	Balanced Energy	15.39	15.25	17.60	20.95	23.97
18.23	Green World	21.38	22.35	26.31	31.51	36.44
18.23	Production Led	26.55	30.51	36.90	46.02	54.67

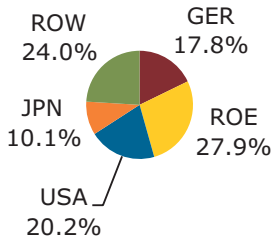
As the following figures present, according to Marketbuzz, by 2015, demand in Germany will account for between 17.7% and 18.3% of the demand in global market, Japan between 7.7% and 10.1%, other countries in Europe between 27.9% and 36.7%, U.S. between 12.0% and 20.2%, and the rest of the countries of the world between 23.3% and 26.3%.

Annual PV Market Demand (2010-2015)

Balanced Energy Scenario PV Market Forecast (GW)

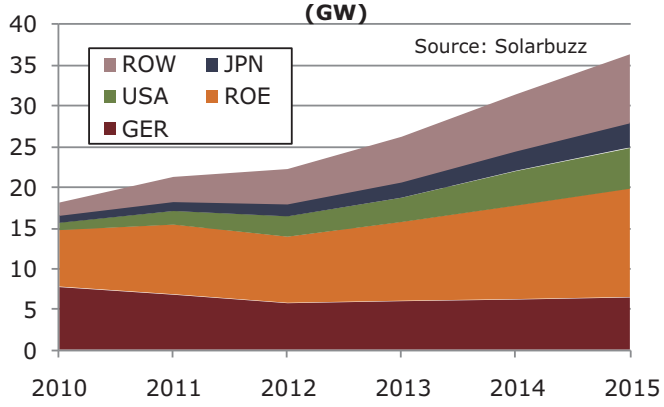


Balanced Energy Scenario World Market 2015

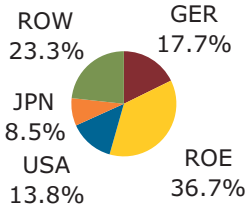


Source: Solarbuzz

Green World Scenario PV Market Forecast (GW)

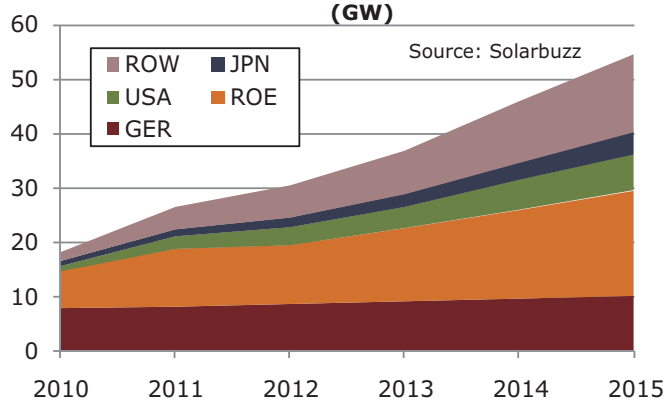


Green World Scenario World Market 2015

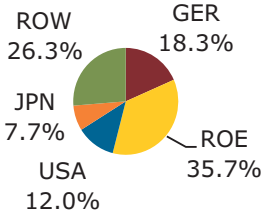


Source: Solarbuzz

Production Led Scenario PV Market Forecast (GW)



Production Led Scenario World Market 2015



Source: Solarbuzz

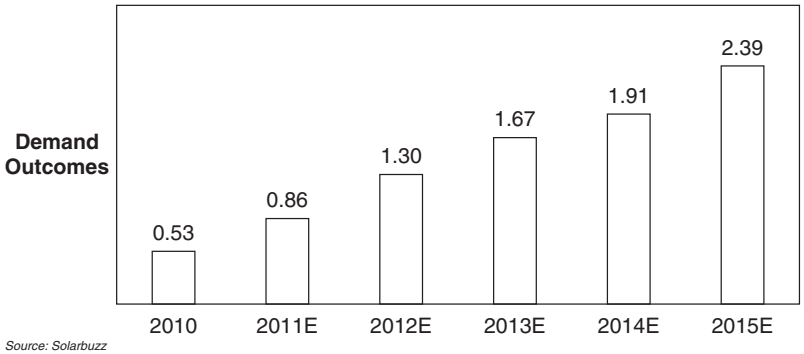
Germany retained leadership ahead of rapid growth by Italy and the Czech Republic in 2010, with these three European countries all exceeding the 1 GW scale. Germany alone accounted for 42% of global market demand in 2010. According to Marketbuzz, from 2010 to 2015, U.S., Germany and the rest of the countries in Europe will become the countries or areas with the highest increment speed.

PRC Photovoltaic Power Generation

In recent years, electricity generated by the newly-built PV in the PRC demonstrated an upward trend. The PRC witnessed 155% growth in installations, up from 208 MW in 2009, taking the cumulative installed capacity to 532 MW. In 2010, the market share of PV in the PRC only makes up a relatively small percentage. In a country demand forecast matrix from 2011 to 2015 produced by Solarbuzz, where each of the 19 countries is assessed against its size of market in 2010, market growth potential and the policy risk in relation to that growth, the PRC is one of the only two countries whose assessment result is positive in each dimension.

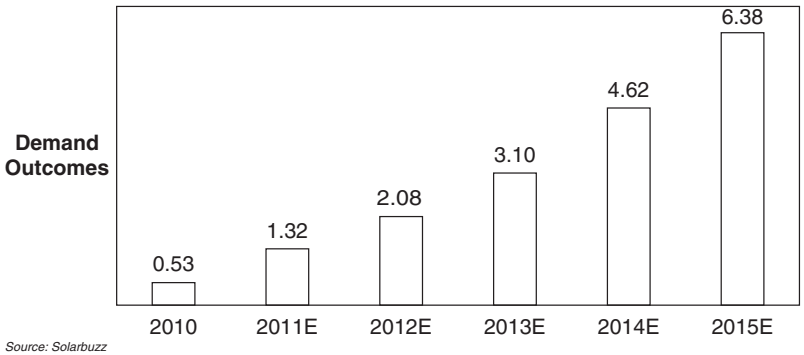
The following three figures illustrate the PRC's demand outcomes in 2010 and Solarbuzz's forecast of the same from 2011 to 2015 under three different scenarios.

Balanced Energy Scenario (GW)



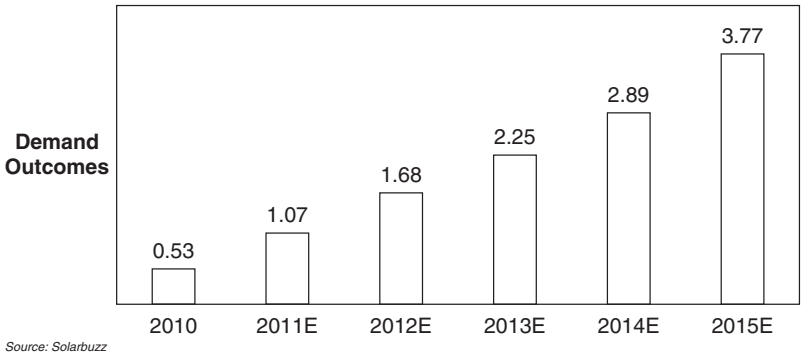
Source: Solarbuzz

Production Led Scenario (GW)



Source: Solarbuzz

Green World Scenario (GW)



Source: Solarbuzz

In April 2009, the Ministry of Finance Regulations, the Department of Housing and Urban Construction jointly issued the *Solar Photovoltaic Building Demonstration Application Guidelines*, subsidizing each BIPV project using solar photovoltaic building materials and their components at a maximum of 20 *yuan*/W; and subsidizing each BIPV project using photovoltaic building materials for roof and walls at a maximum of 15 *yuan*/W.

In July 2009, the Ministry of Finance launched the "Golden Sun Plan" to support the demonstration and application of the PV industry in the PRC. According to the "Golden Sun Plan", photovoltaic power generation systems will be subsidized in the amount of 50% of the total project investment; while installation of independent photovoltaic power generation system in remote areas without electricity will be subsidized in the amount of 70% of the total project investment. In principle, the individual capacity of the PV power generation projects should be no less than 300kWp, and should be owned by investors whose total assets should be no less than 100 million *yuan*.

On July 24, 2011, the NDRC issued the Notice regarding Improvement to the Feed-in Tariff Policy for On-grid Solar Power Generation (《關於完善太陽能光伏發電上網電價政策的通知》), which became effective immediately, to provide for a unified standard for feed-in tariff of the on-grid solar power generation nationwide. This Notice is considered to be one of the most important drivers in accelerating development in the PRC's domestic solar market and is expected to help promoting the solar power generation in the PRC. Pursuant to the Notice, for projects approved before July 1, 2011 and commencing operation by December 31, 2011 whose tariff pricing was not reviewed by NDRC, a uniform on-grid tariff of RMB1.15/kWh shall apply; for projects approved on or after July 1, 2011, or approved before July 1, 2011 but not completed before December 31, 2011, a unform on-grid tariff of RMB1.0/kWh will apply (with the exception of Tibet where the 1.15RMB/kWh tariff will still apply). NDRC has indicated that it will adjust the tariff level based on changes in investment cost and technological progress, among others. The implementation details for this newly announced feed-in tariff policy have yet to be issued as of the Latest Practicable Date.

Drivers for PV industry

Reduced dependence on finite amount of conventional energy sources

As existing fossil fuel reserves are depleted, upward pressure is created on the prices of oil, gas and coal. Unlike fossil fuels, solar power does not face fuel price volatility or supply constraints nor does it present delivery risks associated with fossil or nuclear fuels. A properly sized and configured solar power system can be designed to reliably supply electricity on a long-term and fixed-cost basis.

Reliability and durability

Without moving parts and the need for regular maintenance, solar power systems are highly reliable and durable forms of electricity generation. Accelerated aging tests have shown that quality solar modules can operate for 25 to 30 years without any major maintenance.

Government incentives for solar power

The use of solar power continues to grow in countries where governments have implemented renewable energy policies and incentives to encourage the use of solar power

and other renewable energy sources and accelerate their net metering. Governments have offered various forms of financial incentives including subsidies, feed-in tariffs, net metering, tax credits and other incentives to end-users, distributors, system integrators and manufacturers of solar products.

Decreasing costs of solar power and accelerating grid parity

Solar power has become an attractive alternative energy source because of narrowing cost differentials between solar power and conventional energy sources due to significant declines in the average prices of solar products, which have been largely driven by the declines in raw materials prices, growing production capacity and improved production technologies.

Competitive Landscape

Although there has not been any official ranking in respect of the solar power EPC services in the PRC, we believe that, based on our experience in solar power plant construction, with a cumulative installed capacity of 151.5 MW as of September 30, 2011, we are a leading solar power EPC service provider in the PRC.

The following sets forth our key sources used to prepare this "Industry Overview" section:

- *Garrad Hassan*. We commissioned Garrad Hassan (Beijing) Technology and Service Corp. Ltd. ("**Garrad Hassan**"), an Independent Third Party, to prepare the Garrad Hassan Technical Report and Industry Report for use in whole or in part in this prospectus. Information extracted from the Garrad Hassan Report is contained in sections such as "Summary," "Industry Overview," "Business" and "Financial Information" of this prospectus. We paid Garrad Hassan a fee of RMB225,000 for the preparation of the Garrad Hassan Industry Report.

  Garrad Hassan is a member of the Germanischer Lloyd SE ("**GL**") group of companies, and is part of GL's renewable energy consulting business, trading under the GL Garrad Hassan brand. With more than 750 staff in over 40 locations worldwide, Garrad Hassan offers a range of integrated global technical and engineering services, software products and training.

  Garrad Hassan prepared the Garrad Hassan Industry Report based on its in-house database, independent third-party data sources and publicly available data from relevant government departments and national and global industry associations. Where necessary, Garrad Hassan reviewed both government targets for the wind power industry and published lists of influencing factors such as grid capacity restrictions and development plans, planning restrictions, the general political climate and the financial environment.

  When preparing the Garrad Hassan Industry Report, Garrad Hassan employed a three-step methodology. First, it reviewed in detail existing materials held in-house, including Garrad Hassan and Partners Limited (GHP)'s Global Wind Turbine Installation Projection Database and GHP's Offshore Wind Farm Projects Database. Second, it conducted primary research to update and expand the existing knowledge base. Third, Garrad Hassan consulted its expert staff involved

in projects across the industry value and supply chains for input on relevant topics to ensure that the analysis is based on fully up-to-date public domain and industry information.

We have no reason to believe that such information is false or misleading or that any fact has been omitted that would render such information false or misleading. The information has not been independently verified by us, the Joint Sponsors, the Underwriters or any other party involved in the Global Offering and no representation is given as to its accuracy. Forecasts and assumptions included in the Garrad Hassan Industry Report are inherently uncertain because of events or combinations of events that cannot reasonably be foreseen, including, among other things, the actions of government, individuals, third parties and competitors. Specific factors that could cause actual results to differ materially include, among other things, risks inherent in the renewable power industry, financing risks, labor risks and regulatory risks.

- *Frost & Sullivan.* We commissioned Frost & Sullivan (Beijing) Inc., Shanghai Branch Co. ("**Frost & Sullivan**"), an Independent Third Party, to prepare an independent industry report on the PRC's thermal power environmental protection market for use in whole or in part in this prospectus. This Prospectus contains information extracted from the Frost & Sullivan Report in sections such as "Summary," "Industry Overview," "Business" and "Financial Information". We paid Frost & Sullivan a fee of RMB1,020,000 for the preparation of the Frost & Sullivan Report.

  Frost & Sullivan is an independent industry consultant founded in 1961 which has over 35 global offices and employs over 1,800 analysts and experts worldwide. The firm covers a number of industries, including aerospace, defense, automotive, transportation, chemicals, energy and power systems, environmental technologies, electronics, information and communication technologies and healthcare.

  Frost & Sullivan researches and analyzes new market opportunities for corporate growth and has prepared the Frost & Sullivan Report based on data released by government institutions such as the NDRC, China Electricity Council as well as study undertaken by Frost & Sullivan through primary research which involves discussing the status of the industry with leading industry participants and industry experts. The methodology used in the Frost & Sullivan Report is the Expert Opinion Consensus Methodology, which integrates several forecasting techniques with the market engineering measurement-based system. The methodology is a seven-step system that maximizes the credibility and accuracy of the information in the Frost & Sullivan Report. We believe that the sources of information are appropriate sources for such information and have taken reasonable care in extracting and reproducing such information.

  We have no reason to believe that such information is false or misleading or that any fact has been omitted that would render such information false or misleading. The information has not been independently verified by us, the Joint Sponsors, the

Underwriters or any other party involved in the Global Offering and no representation is given as to its accuracy. Assumptions included in the Frost & Sullivan Report are inherently uncertain because of events or combinations of events that cannot reasonably be foreseen, including, without limitation, the actions of government individuals, third parties and competitors. Specific factors that could cause actual results to differ materially include, among other things, risks inherent in the thermal power industry, financing risks, labor risks, supply risks, regulatory risks and environmental concerns.

- *BP Statistical Review of World Energy, June 2010*. The BP Statistical Review of World Energy is an annual publication published by BP since 1951 and currently has a worldwide circulation of 60,000 printed copies. We did not commission the BP Statistical Review of World Energy. The statistics in the BP Statistical Review of World Energy are taken from governments and other primary sources as well as published data.

- *China Electricity Council*. Founded in 1988, China Electricity Council ("CEC") is a consolidated organization of China's power industry enterprises and institutions and operates under the supervision of the State Electricity Regulatory Commission. We did not commission CEC.

- *National Bureau of Statistics of China.* Directly governed by the Central Government of the PRC, the National Bureau of Statistics is responsible for the collection and coordination of national statistics. We did not commission the National Bureau of Statistics of China.

- *Solarbuzz's Marketbuzz Annual World Photovoltaic Market Review published in March 2011 and revised in April 2011.* Solarbuzz LLC is a leading international solar energy research and consulting company and is not commissioned by us. It provides industry reports, commissioned studies and research and consultancy services in relation to the solar photovoltaic market and industry.