

CHINA CLEAN ENERGY REPORT

**Energy Research
Institute to Issue
Guidance on
Overcapacity**

**Solar Power Tariff
Rumored to Arrive
by Year-End**

**70% Component
Policy to Be
Dropped for Foreign
Wind Players**



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From Hangzhou to Copenhagen - Two Critical Months for Sino-US Relations

As Chinese and American officials convened in Hangzhou for their annual Joint Commission on Commerce and Trade (JCCT) meeting on October 22, clean energy and the environment took center stage. With the UN Climate Change Conference in Copenhagen looming large (one month away and counting), US President Barack Obama scheduled to visit Beijing on November 15, and US trade disputes against China swirling, there was much to talk about.

Chinese Vice Premier Li Keqiang called for the two countries to boost research and technology exchanges across a range of clean energy industries. Cooperation, mutual benefit and an end to trade protectionism - the usual chestnuts - were highlighted. Despite developmental differences between the two countries, Li said, the countries' interests in a sustainable existence were the same.

For Washington, one of its main priorities was pressing for more market access for US clean energy companies in China. Western enterprises on the whole have oft complained of being cut out of China's largest and most lucrative domestic clean energy projects.

"These are the issues we've been raising in a number of discussions that are part of the JCCT. Our objective is to allow American companies to compete," US Commerce Secretary Gary Locke told reporters at the meeting. "We recognize that the Chinese companies also have much to offer the United States, and we seek a level playing field for both sides."

Locke described the Hangzhou meeting as "productive," and the days following the JCCT meeting certainly bore him out. Less than a week afterwards, Beijing announced its intention to drop its long-standing local manufacturing requirement on wind power projects, a policy that had mandated 70% of projects' components and technologies be sourced domestically. Despite years of lobbying from (more firmly established) European wind power companies, it was American interests that seemed to have made the difference.

"The US had hoped that there would be no local content requirement in the wind power market and we agreed with that," said National Energy Administration director Zhang Guobao. "So US wind power technology will enter the Chinese market equally and freely." Well, that was easy! No word yet on a timeframe for when the policy will be dropped.

This announcement coincided (was related to?) a major breakthrough in Chinese clean energy firms' quest for a place in the US market. State-funded Shenyang Power Group and US wind farm developer Cielo Wind Power announced on October 29, plans for a US\$1.5 billion, 600 MW wind farm in Texas, the first time a Chinese manufacturer will export wind turbines to American soil. The deal has raised some protectionist hackles in the US on account of it (a US-China deal) receiving US federal stimulus money, but it looks likely to go ahead nonetheless.

It's heartening to see the world's two biggest CO₂ emitters engaging each other on renewable energy and, more importantly, demonstrably getting deals done. But, even this bit of clean quid pro quo does not brighten the skies for Copenhagen, where the world is hoping for a unified and binding accord to stem climate change. Senior US climate change negotiator, Todd Stern, has already come out and said China and US would not reach a "broad agreement per se" on specific emissions reduction targets during President Obama's visit to China in November, all but ensuring the countries will fail to do the same in Denmark.

Then again, protecting the environment by way of billion-dollar investments, new jobs and happy investors is easy. It's curbing, conserving and cutting-back that's the hard, yet inescapable, part.

Tom Pellman
Chief Editor

Siemens' Efforts to Shift the Thinking on Wind

Q: Can you talk a bit about Siemens' background in China and wind energy as a whole?

A: Siemens acquired a medium-sized Danish wind turbine maker, Bonus Energy, in 2004. Their business at that time was mainly on- and offshore projects in Europe. After that acquisition, our first strategic decision was to move to the Americas, which was successful. The next step was to move to Asia and, as an essential part of it, enter the China market. Our regional wind power headquarters is in Singapore, and we have two large branches in China and India.

We are establishing local blade-manufacturing factory in Shanghai, which we broke ground on few months ago. We will have our first products leaving the factory during the 2010 Shanghai Expo next year. If you look to our global position, we are currently number six in the world, with around 8% market share, we are number one in the offshore market. That is another reason that makes us very confident for China because the offshore market here is an emerging market.

Q: Is China's grid connectivity a big challenge for its emerging offshore market?

A: Grid connectivity is still an issue in many parts of China. The good thing from Siemens perspective is we can say, "We have a solution for that." We can deliver solutions for grid connectivity for offshore, with the entire solution actually existing offshore. That's one of the strengths of our company that we can provide a range of services for whatever's needed.

Q: What is your strategy to compete with local Chinese turbine manufacturers? What challenges do you foresee?

A: We are trying to shift the thinking away from a "kilowatt evaluation" to a "kilowatt-hour evaluation." Normally, each turbine has a capacity, say, of 2MW – and the turbine is priced according to this capacity. But, this just



Andreas Dupuis
Siemens, General Manager Sales and Proposals Asia Pacific

reflects the price for the hardware and does not reflect a price for the amount of potential energy generated. The challenge is to develop and provide high-quality turbines with a high-energy yield, a good power curve – and this is not cheap to develop. But at the end of the day, (using high-quality turbines), you get much more energy out of them. So, if you calculate the amount of energy over the life of a turbine, you come to a price per amount of generated energy – and if you take this number we are certainly very competitive.

Q: Do you have any thoughts on how China's current overcapacity of wind turbines is going to be resolved?

A: I consider this the beginning of a shake out and consolidation phase for wind turbine manufacturers. There are approximately 80 players in the Chinese market and the quality of their products varies. China is interested in developing higher-quality products. I think this is quite positive and moving in the right direction.

Energy Research Institute to Issue Guidance on Overcapacity

Energy Research Institute (ERI) affiliated to the National Development and Reform Commission is drawing guidance on the development of renewable energy in a bid to tackle overcapacity in this sector, said Ren Dongming, an official with ERI.

Ren said the guidance is supported by the State Council and will be milestone on the regulation of renewable energy. Ren stressed that China only faces potential overcapacity in multi-crystalline production and structural overcapacity in the manufacturing of wind power turbines.

The official also urged the government to carry out industry planning and infrastructure building

and release early warning information for the renewable energy industry.

China's stimulus package on new energy is awaiting approval of relevant departments and will be announced by the State Council, added Ren.

The stimulus plan will greatly increase the scope of development goals from those put forward in the NDRC's previous plan.

The revision of China Law of Renewable Energy is in need of further discussions before its release and implementation, Ren added. (2009-10-20)

Solar Power Tariff Rumored to Arrive by Year-End

Unnamed sources close to the National Development and Reform Commission (NDRC) disclosed that an on-grid price for solar power is likely to come out before the end of this year, and is expected to be US\$ 0.161 to 0.176 per kWh. The price of solar power is significant in that once it is announced, the rate of return on investment in China's solar industry will be clear. Furthermore, a large number of PV plant projects are expected to begin operation soon, which will also help the oversupplied polycrystalline silicon industry to find a way forward. At present, China uses a case-by-case bidding system to determine the on-grid solar power tariff, with the aim of driving down solar power costs.

But according to the NDRC's original plan, a US\$ 0.16 price – the lowest in the young

industry's history – was to be used to set the future industry benchmark. "Policy for on-grid electricity decides the fate of power generation companies," said a source at a Dunhuang power company told Caijing. "If US\$ 0.16 per kilowatt hour is set as the benchmark price, the majority of photovoltaic enterprises will be unable to achieve profitability."

However, a number of companies still regard a price set at US\$ 0.161 to 0.176 per kWh too low to accept. When talking to the NDRC they argued that an on-grid solar power price US\$ 0.22 per kWh would be reasonable. Regardless of the final price, the setting of an on-grid price is a significant step forward for the solar power industry, and it will be the second approved on-grid price in new-energy industry, following the on-grid wind power price. (2009-10-30)

70% Component Policy to Be Dropped for Foreign Wind Players

China will drop a requirement that most of the components of wind power-related equipment be made within its borders, a beneficial move for foreign companies who argue that they have been locked out of China's wind-power market.

Commerce Minister Chen Deming announced

the move at a press conference in Hangzhou, Zhejiang province, to repeal the requirement set in 2007 by the National Development and Reform Commission. Chen was attending the 20th China-US Joint Commission on Commerce and Trade.

The regulation had stated that all local governments use more than 70 percent locally made technologies and products in their wind power facilities.

“The US had hoped that there would be no local content requirement in the wind power market and we agreed with that,” China’s National Energy Administration chief Zhang Guobao told reporters on Oct.29. “So US wind power technology will enter Chinese market equally and freely.”

The Global Wind Energy Council recently announced China will become the biggest growth market for wind power generating capacity this year, ahead of the US.

US Secretary of Commerce Gary Locke, US Trade Representative Ron Kirk and Vice-

Premier Wang Qishan on October 29 co-chaired the first joint commission meeting under the administration of US President Barack Obama, two weeks before Obama's first visit to China.

China's local wind turbine manufacturing industry has grown dramatically due to the recent economic stimulus spending.

China-made equipment companies have emerged as a major force in the international wind market. Until recently, they had only won small contracts in the US, Cuba, Peru, Africa and the Middle East.

The two countries also signed a pact to promote the establishment of the China-US Energy Cooperation Program, which will focus on commercialization of clean energy solutions. (2009-10-30)

Renewables to contribute 17% of China's Power by 2020

China is speeding up implementation of its new energy generation strategy. The State Grid predicts that by 2020, China's installed new energy generating capacity will reach 290 million kw, accounting for 17% of total installed power generation capacity, up from 15%, the previous target. Of that total, the capacity of nuclear, wind, solar, and biomass power generation will reach 86 million kw, nearly 150 million kw, 20 million kw, and 30 million kw, respectively. The total investment will top US\$439.45 billion.

According to an earlier State Council plan, China's solar and wind power generation was expected to reach 0.3 million kw and 5 million kw by 2010, and 1.8 million kw and 30 kw by 2020. Nuclear power generation was by then also expected to reach 40 million kw.

However, besides biomass power, the new plan differs markedly from the old one. According to the new plan, total installed biomass power generation capacity will reach 30 million kw in 2020, and the annual utilization of fuel alcohol and bio-diesel will reach 10 million tons and 2 million tons, respectively. So within 15 years, the annual growth of biomass power generation, fuel alcohol, and bio-diesel is expected to reach 93%, 59%, and 260%.

State Grid Deputy General Manager Shu Yinbiao says that, at the end of 2008, China's total installed generating capacity of new energy power stood at 21 million kw, accounting for 3% of the total. Of that, nuclear and solar power capacity reached 8.85 million kw and 0.14 million kw, respectively, up 113% and 40%, year on year. Biomass power generation totaled about 3 million kw.

Liang Zhipeng, director of the Department of New Energy of the National Energy Administration, said photovoltaic generators are still in development, and that manufacturers were not fully prepared for machines producing more than 100,000 kw. In the near future, the scale of photovoltaic power stations will be between 10,000 kw to 30,000 kw.

The government will continue to promote the construction of large wind power projects. Several bases with over one million KW capacity are been planned. In fact, currently there are six wind power bases with over 10 million kw of capacity in Jiuquan, Hami, Inner Mongolia, Hebei, and Jilin, and the wind power base in the sea off Zhejiang Province. (2009-10-26)

Sino-US Clean Energy Cooperation Lauded

As top energy producers and consumers as well as carbon dischargers, China and the US have achieved a consensus on jointly developing clean energy. Experts hold that the Sino-US energy cooperation is likely to make substantial breakthrough in new-energy vehicles, energy-saving buildings, carbon capture, and the storage and bioenergy industries.

Zhou Dadi, deputy director of the China Energy Research Society, said that China should make greater efforts in developing nuclear power, hydropower, and natural gas for the time being to cope with China's surging energy demand. However, clean-energy industries like wind power and solar power, which are expected to play a significant role in 2030-2050, are also important and their development should not be neglected in China.

The Chinese Academy of Social Sciences (CASS) pointed out in a Climate Change Green Paper on Oct.20 that since the most advanced clean-energy technologies are owned by developed countries, if a developed country like the US provides abundant support in funds and technology, China certainly will be able to make a greater contribution in carbon emission reductions.

China and the US already announced a plan to jointly invest US\$15 million to establish a Sino-US joint research center for clean energy in July of this year.

China is also planning to raise the proportion of non-carbon energy up to 15 percent, an important new move for Sino-US cooperation in new energy. (2009-10-23)

Goldwind Eyes American Wind Market

China's aerogenerator production capacity can satisfy the domestic demand, so more wind power companies are extending reaches to the international market, said Shi Pengfei, vice president at the Chinese Wind Energy Association (CWEA).

In order to help domestic aerogenerator manufacturers export their products to Africa and undertake the local wind power projects, The Export-Import Bank of China (China Eximbank) is actively preparing loans for the wind farm projects in Africa. Meanwhile, some companies quicken their steps toward the overseas M&As (mergers and acquisitions).

For instance, Xinjiang Goldwind Science & Technology Co., Ltd. and Xiangtan Electric Manufacturing Co., Ltd. separately acquired a counterpart in Europe, taking the lead in internationalization.

Goldwind plans to build wind farms and sell aerogenerators in the US from now on, but its eyes will be still focused on the product manufacturing. As for Xiangtan Electric Manufacturing, it is expected to cut in the European offshore wind power sector, by virtue of the purchase of a Dutch peer. (2009-10-22)

Qinghai Plans \$2.2b Solar Industry

Qinghai province in West China is planning to invest a total of US\$2.270 billion in the solar power industry by 2010 to build an integrated PV industry chain, according to the Plan of Development and Popularization of Solar Power Industry of Qinghai Province, which has been approved by the Qinghai provincial government.

The plan also proposed to promote solar power industry to be the fifth pillar industry for Qinghai

by 2015 after power, oil and gas, salt lake chemicals and non-ferrous industries.

Qinghai province is one of China's largest solar resources areas with annual average sunshine time of 2,500-3,650 hours. So far, Qinghai has had more than 20 solar power production enterprises, and some products have been exported to overseas market. (2009-10-09)

Beijing to Install 70MW in Solar Power by 2011

The local government of China's capital, Beijing, has developed a promotion program for new energy, and aims to have 70 MW of installed solar photovoltaic (PV) capacity by 2011. A number of solar PV power stations and buildings-integrated photovoltaic (BIPV) facilities

on rooftops with more than 5 MW capacity will be built in Beijing as demonstration projects.

China only had 40 MW of installed solar PV capacity by 2008, but aims for 2 GW of installed capacity by 2011. (2009-10-14)

China Expands "Golden Sun" Program to 2,500 MW

China has expanded its "Golden Sun" program so that it will now subsidize the construction of 2,500 megawatts (MW) of photovoltaic (PV)

power projects by 2015, an official with Ministry of Science and Technology (MoST) said at an industry forum on Oct. 23. (2009-10-23)

PV Market Goes Local

China is to carry out studies on policy to expand domestic demand for solar photovoltaic (PV) products and encourage domestic multi-crystalline silicon makers to focus on China's indigenous market, said Chen Qiufa, vice Minister of Industry and Information Technology.

Speaking at the 2009 Western China International Economy and Trade Fair in Chengdu, Chen said that the government would maintain strict control on the new launch of multi-crystalline silicon projects, as they demand a great deal of electrical power.

China will not approve or accept applications for those multi-crystalline projects without comprehensive supporting facilities and the approval of environmental protection authorities.

Moreover, China plans to phase out the multi-crystalline projects with overall power consumption surpassing 200 kilowatts for each kilogram of multi-crystalline silicon before 2011.

The government will also encourage multi-crystalline producers to cooperate or merge with solar photovoltaic cell makers in a bid to extend the industry chain.

Multi-crystalline makers will have government support to form links with power plant and chemical operations, and to develop energy-saving solar-class multi-crystalline silicon with

the aim of cutting production costs.

The capacity of new multi-crystalline silicon plants shall be more than 3,000 tons each year with less than six hectares of land to produce 1,000 tons of multi-crystalline silicon, and electricity consumption of solar class multi-crystalline silicon must be below 60 kilowatt per kilogram, according to Chen.

Wang Shaoxiong, a high-ranking official with the state-owned assets watchdog in Sichuan province, said that Sichuan would employ stringent industry access threshold when introducing multi-crystalline silicon projects.

Analysts have said that the central government is likely to announce actions to rein in unnecessary construction, and the ongoing industry reshuffle will pick up pace, with weak players to be phased out quickly.

China will produce 140,000 tons of multi-crystalline silicon each year if multi-crystalline silicon plants under construction or planned are put into full operation. By contrast, world demand on multi-crystalline silicon is predicted to stand at around 80,000 tons in 2010.

China produced 2,300 MW of solar cells in 2008, with only 50 MW, or less than 3 percent, absorbed by the domestic market. (2009-10-22)

MoF: \$11m for 5 Jiangxi BIPV Projects

China's Ministry of Finance (MoF) has earmarked US\$ 11.15 million in subsidies to fund five building integrated photovoltaic (BIPV) projects with a total installed capacity of 7.44MW in Jiangxi province, Solarbe.com reported October 24. Among the rooftop projects, a 2MW project by Jiangxi-based multicrystalline wafer maker LDK Solar will receive US\$ 2.67 million

in subsidies, the report said. The remaining projects are located in schools, museums, government offices, according to the report.

The MoF said it will help finance a 500kW BIPV projects in Sichuan and four roof-based PV projects in Yunnan province. (2009-10-26)

China Wind Power Capacity Up 30% from 2008

China's installed wind power generating capacity reached 15.85 Gigawatts (GW) by the end of September, up 30 per cent from the end of 2008, the official Xinhua news agency has reported.

The newly added capacity of 5.59 GW, was allocated among 19 major wind power provinces, including 93 projects, the report said, citing a senior energy official.

Zhang Guobao, head of National Energy Administration, told a forum that China would work out more policies including technology, fiscal, tax and price incentives, to facilitate better and faster development of the wind power industry, according to the report.

The figure was in line with China's plan to bring its total wind power capacity to 100 GW by 2020 - part of a broad energy target to generate 3 per cent of total electricity from non-hydro renewable energy.

Adding to the new capacity was Jiuquan mega wind power base in the northwest Gansu province with a total generating capacity of 10 GW, which will be completed by 2010.

China has been seeking more clean power to fuel its fast economic growth. The country plans to lift installed wind power capacity to 35 GW by the end of 2011, five GW of which are to be from offshore wind farms. (2009-10-23)

A-Power Gets Contract for Eastern China Wind Farms

Chinese wind turbine manufacturer A-Power Energy Generation Systems Ltd. said on Oct.14 it secured a US\$36.2 million contract to develop a 19.5-megawatt wind farm in Eastern China.

The wind farm, developed for a unit of Datang International Power Generation Co. Ltd., will be located in the Donggan, Rizhao City of Shandong Province.

According to the deal, A-Power will supply the wind turbines, the towers and the foundations. The company will also oversee the construction, subcontracting and installation for the project.

The Rizhao Donggang Wind Farm project, owned by Rizhao City Hengyuan Wind Power

Co. Ltd., has an initial requirement of eight units of the 2.5/2.7 megawatt wind turbines and is expandable to 100 megawatts.

The project is scheduled to begin November, with an estimated completion time of November 2010.

The contract represents A-Power's second full-responsibility wind farm project since it signed a US\$90.5 million deal in September to develop a 49.5-megawatt wind farm in Inner Mongolia. (2009-10-14)

Yingli Green Energy to Set Up \$2.2b Energy Base

Yingli Green Energy reached an agreement on October 20 with Hebei Construction & Investment Group and the government of Hebei's Laiyuan County to invest a combined sum of US\$ 2.2 billion to establish a green energy base, including solar and wind power generation, reports ln-en.com.

Under the agreement, the three parties plan to break ground on a Laiyuan project in November that will receive US\$ 263.7 million investment and exceed capacity of 60MW, said the report. (2009-10-22)

China Aviation Inks 300MW Wind Project

Domestic and overseas investors decided on September 21 to invest US\$8.7 billion for over 40 projects in Rudong county, Jiangsu province. Most of the new projects are in power, energy and for manufacture of generating units, and are part of the nation's efforts to build clean energy bases.

Jiangsu has got approval from the central government to build seven wind power farms with a combined capacity of 1,250-mW generating units by 2010, which may cost US\$1.46 billion. Rudong has established the largest wind power farm in Asia on an area of 200 hectares with a capacity to generate 1,000 mW of electricity, said Gu Shuying, deputy chief of Rudong county. The county is also setting up

a new 420-million-yuan wind power project as part of the new deals signed, she said.

With abundant wind resources along its 106-km coastline, Rudong plans to install 4,120-mW wind power generating units including 620 mW for land farms, 2,500 mW for sea farms and 1,000 mW for tide generation. The county has injected US\$2.05 billion into the projects to build wind power farms with a capacity of 970-mW generating units, said county chief Zhan Lifeng.

A total of 264 generating units with a combined 420-mW generating capacity will be installed by the end of this year, said Zhou Hua, deputy director of the Rudong new energy bureau. (2009-09-22)

China Guodian Pours \$1.32b in New Energy Program

China Guodian Corporation recently launched its new energy base program in Yixing of Jiangsu Province with overall investment of US\$ 1.32 billion in a bid to build solar power stations and wind power turbines. End-use products include integrated systems and power stations by new energy.

China Guodian will invest US\$ 1.17 billion in solar photovoltaic project highlighting development of high-efficient HIT solar cells and thin film silicon.

Guodian also founded Guodian Jintech Solar Energy (Yixing) Co., Ltd. through reorganizing Yiixng Jintech Solar Energy Co., Ltd.

Guodian Union Power Technology Co., Ltd., a subsidiary of China Guodian will invest US\$ 52.7 million to build a wind turbine production line, which is designed to produce 1,000 sets of 1.5-MW wind power turbines annually in the first phase, and 1,500 sets of 2.6-MW wind power turbines in the second phase.

As one of China's five power generation groups, China Guodian has 7 6,950 MW of controllable installed power capacity by September 2009 and produces more than 22 million tons of coal each year. (2009-10-20)

Huadian Inks Ningxia Wind & Solar Base

China Huadian Corporation's Ningxia Autonomous Region branch signed a framework agreement before China's October 1 National Day to build a new energy base with 300MW of installed wind power capacity and 50MW

of solar capacity in Ningxia's Haiyuan County, reports sasac.gov.cn. By the end of 2015, Huadian plans to expand its share in the joint project to 1GW of wind and 100MW of solar capacity, the report said. (2009-10-12)

Guodian Longyuan Fires Up Two Wind Farms

Guodian Longyuan Electrical, a subsidiary of China Guodian Corporation, has started generating electricity in two wind farms in Saiwusu and Changling, Inner Mongolia province, each with capacity of 49.5MW, reports

Cnecc.org.cn. Currently, Guodian Longyuan Electrical has begun production in 11 wind power projects with total production capacity of 479.7MW, said the report. (2009-10-14)

Weapon Group Marks \$1.5b for New Energy

China South Industries Group Corporation (CSGC) has signed an agreement with Jilin provincial government to invest US\$ 1.46 billion in new energy industries in Changchun, Jilin province, Xinhuanet.com reports. CSGC plans

to establish three industrial bases including a wind power equipment manufacturing base and a solar module factory, the report said. (2009-10-14)

Siemens Wind Base Under Construction in Shanghai

Siemens Corporation plans to invest US\$ 85.1 million in a wind turbine production facility that is currently under construction in Shanghai, reports People's Daily Overseas Edition.

Initially, the plant will produce wind turbine blades with capacities of 2.3MW and 3.6MW, China Daily reported October 26. Siemens began producing wind turbines after its 2004 acquisition of Danish wind power company Bonus Energy, the report said.

The facility's first 500MW phase is scheduled to begin production in 2010. The project is expected to reach annual capacity of 1.5GW or 2.5GW upon the completion of its second and third phases, according to the report.

Siemens is also considering investing in solar energy in China, said Siemens China President and CEO Richard Hausmann. (2009-10-23)

GCL-Poly to Build China's Largest Photovoltaic Project

China's leading green energy supplier GCL-Poly Energy Holdings Ltd. will build China's largest photovoltaic (PV) generation project in Xuzhou city of eastern Jiangsu Province, according to the 12th China Xuzhou Investment Forum taking place from October 22 to 26.

by this year's conclusion and have a capacity of 20 GW. Currently, China's total PV generating capacity is 10 GW.

Shu Hua, executive president of GCL-Poly, expects that the project will produce electricity

The project involves US\$ 87.8 million of investment, including US\$ 30 million foreign investment. GCL-Poly is also one of the world's leading polysilicon and wafer suppliers. (2009-10-27)

China Has a 2-MW Rooftop Solar Power Station in Operation

China recently had a 2-MW rooftop solar power station, the largest in the country, in operation in Hangzhou, capital city of coastal Zhejiang Province.

Funded by Zhejiang Energy Conservation Industry Development Co., Ltd., the project has US\$9.5 million of investment and is expected to generate two million kilowatt hours of electricity each year.

The project was started in May, said Nan

Chunhui, chairman of CHI NT Group, which supplies solar products for the power station.

Both parties plan to jointly build rooftop solar stations for factories, public buildings, teaching facilities and hospitals.

Zhejiang aims to attain more than 200 MW of installed solar photovoltaic capacities by 2012. (2009-10-09)

China's First 10-MW Solar PV Station Starts Operation

The China Energy Conservation Investment Corporation recently witnessed the grid-connection of its first 10-MW solar photovoltaic (PV) power station in Shizuishan, in northwest China's Ningxia Hui Autonomous Region.

The solar PV station serves as the first phase of a 50-MW program and has an acreage of 2 square kilometers. The whole solar PV project will be completed by 2011 in three phases. China-

based solar module maker Suntech Power Holdings provided the solar panels for the project.

The state-owned China Energy Conservation Investment Corporation has on paper more than 1400 MW of solar power capacity, including projects under construction or with agreement concluded. (2009-10-12)

Sunergy Signs Long-Term 100MW Contract

Nanjing-based solar cell maker China Sunergy has entered into a framework agreement to deliver 100MW of solar cells and modules to Canadian panel manufacturer Opsun Technologies between 2009 and 2014, the

companies announced October 23. Modules will be provided through OEM arrangements under the agreement, the announcement said. (2009-10-25)

Trina Secures 108MW European Contract

Jiangsu-based integrated photovoltaic (PV) products manufacturer Trina Solar Ltd. has signed an agreement to supply 108MW of modules to European PV equipment distributor PROINSO for use in the European market, including Italy and Spain, Trina said October 22.

Shipments are scheduled to begin in the fourth

quarter, with 38MW and 42MW of modules to be delivered in the fourth quarter of 2009 and the first quarter of 2010, respectively, and shipments will continue through the first half of 2010. PROINSO has an option to purchase an additional 12MW of modules in the first quarter of 2010, under the agreement. (2009-10-23)

Suntech Platform Claims 10% Cost Cuts

Photovoltaic module manufacturer Suntech Power Holdings unveiled its integrated solar platform "Reliathon," which it claims can cut total system costs by up to 10%, in an October 21 announcement. The platform combines Suntech products and business processes to lower the costs of developing utility-scale solar-plants, the announcement said.-

Suntech has signed a multi-year agreement with Advanced Energy Industries, Inc., AE announced October 21. Under the agreement, AE's Solaron inverters and services will be integrated into Suntech's Reliathon platform. (2009-10-22)

Wuhan Train Station to House 2.2MW Solar Project

Wuhan-based Rixin Solar and Hubei Electrical Design Institute plan to break ground on a joint 2.2MW on-grid solar power project, invested in by China Energy Conservation Investment Corporation, in the Wuhan, Hubei province train

station at the end of October, reports Solarbe.com. The project is expected to generate 2 million kWh annually after it is completed in late December, said the report. (2009-10-22)

CECIC to Build 100MW Inner Mongolia PV Station

China Energy Conservation Investment Corporation (CECIC) has signed a letter of intent to establish a 100MW photovoltaic (PV) station with a total investment of US\$ 322.3 million in the Alxa League, Inner Mongolia's

westernmost prefecture, Solarbe.com reported October 19. The company expects to invest around US\$ 32.2 million in the 10MW initial phase, and hopes to complete 30MW of output capacity by 2011, the report said. (2009-10-21)

Hebei Yingxin Sets to Work on 320MW Thin-Film Plant

Hebei Yingxin Glass Group has broken ground on the initial 10MW phase of a thin-film solar cell project with a planned total output capacity of 320MW per annum, spvchina.com reported October 20. The total cost of the project will be US\$ 432.1 million and construction is scheduled

to be completed in 2015, the report said.

Hebei Yingxin Glass Group was established in 1993, claims total assets of US\$ 219.7 million and over 1,800 employees. (2009-10-21)

ENN Partners with Duke Energy to Expand to North America

ENN Group signed on Oct.25 an agreement with U.S.-based Duke Energy Corp to set up a 50:50 joint venture in the U.S. to jointly explore the North American solar energy market, sources reported.

Duke Energy Generation Services, the commercial business unit of Duke Energy, currently has wind power projects exceeding 630 megawatts in the U.S. and plans to add another 350 MW by the end of next year.

The JV, to be set up in 2010, will be focusing on the large utility-scale solar farms and commercial distributed generation solar projects. However, the exact amount of investment has not been decided yet, said Keith Trent, a chairman of Duke Energy.

ENN Group, which is engaged in the development of PV products, chemical products and natural gas distribution, had total assets of US\$ 2.93 billion as of the end of last year. (2009-10-26)

CNPV Gets Go Ahead on 100MW Contract and 10MW Plant

Photovoltaic (PV) product manufacturer CNPV Dongying Photovoltaic Power Company Limited, a wholly owned subsidiary of China Solar Photovoltaic SA, has agreed to supply 100MW of PV modules to German project developer and distribution company SET GmbH between 2010 and 2012, CNPV announced October 26. The agreement includes 20MW to be shipped in 2010 at fixed prices, as well as 35MW and 45MW to be shipped in 2011 and 2012, respectively. Prices may be reviewed mutually on a quarterly basis, the announcement said.

CNPV announced the same day that it has received approval to construct a 10MW grid-connected power plant between the first and second quarter of 2010 on 400,000 square meters of saline alkali land in Dongying, Shandong province. The government will provide 50% of the project's capital, and the project has applied to be designated as a National Golden Sun demonstration project, the announcement said. (2009-10-27)

Jinzhou Inks \$3.7b New Energy Deals

The city of Jinzhou, Liaoning province has signed new energy projects with three state-owned companies worth a total of US\$3.66 billion, Liaoning Daily reported October 12. The municipal government secured a commitment by China Guangdong Nuclear Power Energy Development to invest US\$732.4 million on a 200MW photovoltaic (PV) power project, while China Guangdong Nuclear Wind Power

will spend US\$ 2.5 billion on construction of a wind farm with a planned installed capacity of 900MW and China Huaneng Group will invest US\$ 439.5 million in a 300MW wind power project.

The city officially started construction work on a 13.6-square-kilometer PV park on September 22. (2009-10-12)

Envoy: No China-US Climate Pact from Obama Visit

President Barack Obama's visit to China next month is not likely to yield a separate accord on countering global warming, though both countries are pushing for progress for upcoming global talks in Copenhagen, the top U.S. envoy on climate change said on October 28.

"I don't think we're going to get an agreement per se," said Todd Stern, the U.S. special envoy for climate change. However, he said Obama will work with Chinese President Hu Jintao toward facilitating an agreement at the

international meeting.

Just over a month is left before the U.N. ministerial conference in Copenhagen, which will cap two years of negotiations on a global climate change treaty to replace the U.N.'s 1997 Kyoto Protocol on cutting carbon dioxide emissions.

Obama will make his first visit to China on Nov. 15-18. (2009-10-28)

Hong Kong, Beijing May Become Asia-Pacific Carbon Trading Hubs

Hong Kong or Beijing may become the hub for carbon trading in the Asia-Pacific region within the next three years, with Australia needing to pass climate change laws to be a potential contender.

"I think in another two or three years we will see either Hong Kong or Beijing as the hub," John Marlow, London-based global head of environmental financial products for Macquarie Bank, told the CarbonExpo Australasia

conference on Queensland state's Gold Coast on October 28. Australian states are competing against each other to be the hub, rather than working together, he said.

Governments from around the world will meet in Copenhagen starting Dec. 7 for the final round of talks on a climate accord to replace the 1997 Kyoto Protocol, which expires in 2012. The negotiations are being run by the UN Framework Convention on Climate Change. Australia's houses of parliament are expected to vote on domestic carbon legislation by the end of November.

"I think if Australia really wants to be a leader or a hub, then it better get its act together and do

something quickly, including passing the climate change bill," said Geoff Sinclair, London-based global head of carbon sales and trading for Standard Bank. Singapore and Hong Kong are working aggressively to become the regional center, he said.

China already has several carbon trading exchanges which have started up, said Mina Guli, Beijing-based vice chairman of Peony Capital. There is involvement from the U.S. to help them grow and expand, she said. (2009-10-28)

Study Says China Is Ripe for Carbon Storage

China has vast underground repositories that could store more than a century's worth of carbon emissions from coal-fired power plants and industrial facilities, according to a report to be released by the United States Department of Energy's Pacific Northwest National Laboratory.

The study, conducted with scientists at the Chinese Academy of Sciences, found that the geologic formations are in close to a large percentage of the country's power plants.

That could permit "the continued use of cheap, domestic coal within China while supporting CO₂ emissions reductions via the capture and geologic storage of the associated CO₂," according to an eight-page summary of the study.

Such technology, which remains untried on a commercial scale, comes with high costs, because capturing and storing carbon emissions consumes significant amounts of energy and water. The potential environmental impact of putting billions of tons of carbon dioxide underground also remains unknown.

The Energy Department report does not put a total price tag on pumping China's carbon underground, but it found that transportation

and storage costs could be less than US\$6 per ton of carbon dioxide.

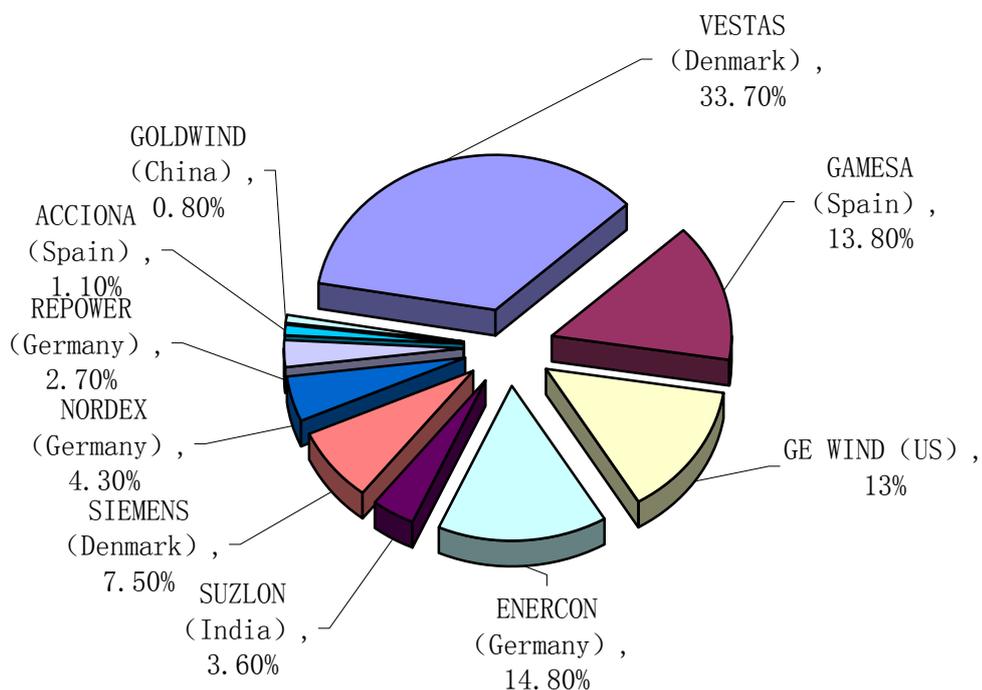
A new study on carbon capture and storage from the International Energy Agency estimated that by 2050 it could cost more than US\$5 trillion to retrofit fossil fuel plants that represent 17 percent of worldwide electricity.

In China and India alone, as many as 62,000 miles of pipelines would need to be built at an estimated cost of US\$275 billion to transport greenhouse gases to underground repositories, according to the agency.

The scientists have identified 90 potential repositories on the Chinese mainland that could store an estimated 2,300 billion metric tons of carbon dioxide equivalent. Coal-fired power stations, cement plants and other industrial facilities emit 3.8 billion metric tons of carbon dioxide a year, or 64 percent of China's carbon emissions, according to the report.

The scientists also found 16 offshore formations that could store an additional 780 billion metric tons of carbon under the seabed. (2009-10-15)

The World's Largest Wind Turbine Manufacturers (2006)

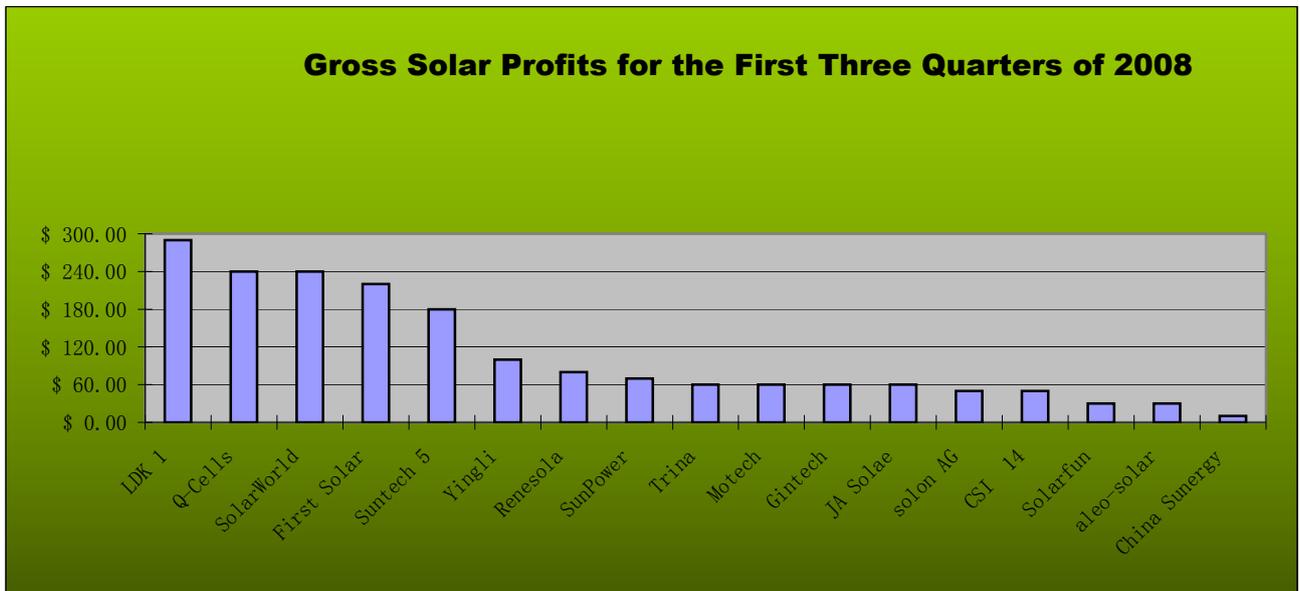


Source: China Wind Power Magazine - 2009

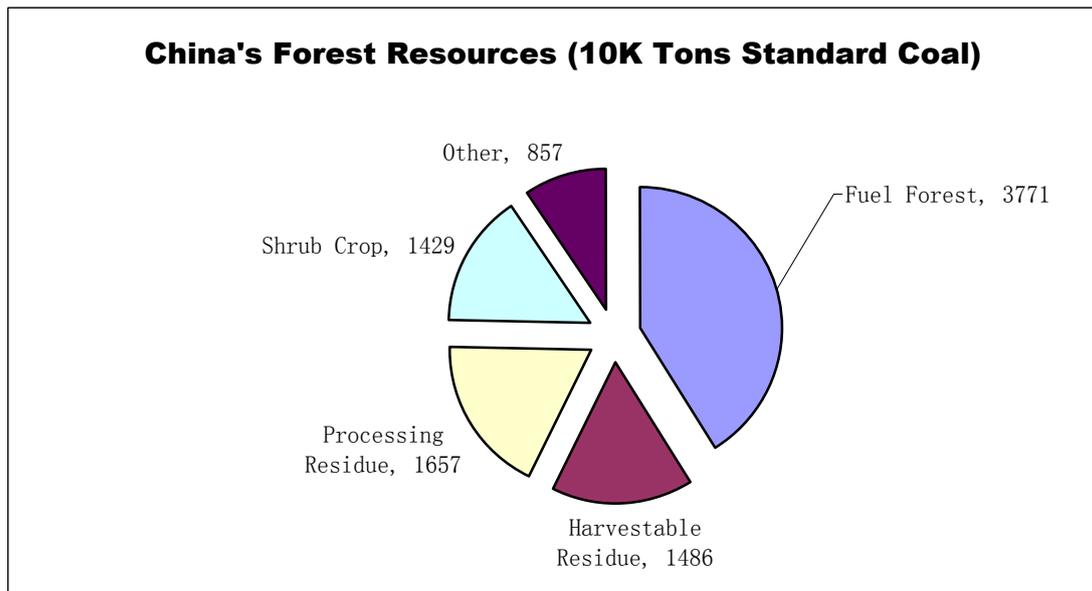
China Small and Medium Wind Turbine Output (1983-2007)



Source: China Wind Energy Magazine - February 2009



Source: China New Energy Magazine - March 2009



Source: China New Energy Magazine - June 2009

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