Grid **Upgrades** Critical to China's **Clean Energy Push**

— An Interview with

Mr Jim Fong

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電網升級對**中國**清潔能源發展**意義重大**

— 專訪**中國通海資產管理有限公司**投資總監**方德露**先生

As China continues to promote renewables, the country's power grid will need continuous investment in upgrading. This includes expanding energy storage infrastructure to ensure supply resilience, representing a prime opportunity for investors to ride the powerful tailwinds of the clean energy transition.

China's ambitious goals to reach peak carbon emissions by 2030 and achieve net zero by 2060 are driving the rapid development of the new energy sector, creating growth drivers to offset the Covid-induced slowdown and present new investment opportunities.

As a whole, the new energy sector encompasses renewable and clean energy technologies such as solar, wind, nuclear and geothermal power generation, as well as equipment manufacturing and energy saving and storage technologies to ensure their effectiveness and reliability.

Although renewables can help to lower the levels of pollution produced and reduce the reliance on fossil fuels, their intermittent nature makes it difficult to thoroughly incorporate clean energy into the power grid. To address this shortcoming, adequate energy storage and a smart grid is required to smooth out the delivery of variable or intermittent power supplies generated by wind or solar.

Resilience is Key to Clean Energy Growth

Though the growth of the energy storage industry has been impressive over the past two years, there is still a bottleneck. Given the carbon neutrality goal and multiple reforms that aim to accelerate transition to clean energy, the country's power grid needs to be significantly upgraded, especially energy storage infrastructure, says Jim Fong, chief investment officer at China Tonghai Asset Management Limited.

Pumped storage hydropower is the most common type of energy storage in use today. It uses excess power to pump water from a lower to an upper reservoir when electricity demand is low and releases it to generate power when needed.

After the energy crunch seen in the southwestern province of Sichuan in August, a rethink is underway about how to increase resilience in China's clean energy supply. Sichuan accounts for 30% of China's total hydroelectric power generation and normally delivers a massive power surplus to the rest of the country. But due to a prolonged drought across the Yangtze basin this year, the province was not able to deliver as much electricity as last summer.

隨著中國進一步推廣可再生能源的發展，電網需要不斷升級才能保持電力穩定供應，對於投資者而言，儲能設備擴容升級提供了絕佳的投資機會。

中國計劃到2030年實現碳排放峰值，到2060年實現淨零排放，「雙碳目標」是國家應對氣候變化的重要承諾，亦正在推動新能源產業的快速發展，有望為經濟注入新動力，緩解新冠疫情引發的經濟放緩，為投資者帶來新的投資機會。

總體而言，新能源領域包括可再生能源和清潔能源技術，如太陽能、風能、核能和地熱發電，以及設備製造和節能存儲技術，相輔相成，才能確保供電穩定。

雖然可再生能源可以幫助減少污染並減少對化石燃料的依賴，但其間歇性特性使得清潔能源難以完全融入電網。為了解決這個缺點，電網需要配備足夠的儲能設備和智能技術，以平穩輸送風能或太陽能產生的可變或間歇性電力。

增強系統韌性 決勝能源轉型

儘管過去兩年儲能行業取得了令人矚目的增長，但瓶頸依然存在。中國通海資產管理有限公司投資總監方德露表示，雙碳政策方針和多項改革加速了推進能源轉型，中國電網有需要大幅升級，尤其是能源存儲基礎設施，才能解決電力供應瓶頸問題。

抽水蓄能是當今最常見的儲能類型。當電力需求低時，它使用多餘的電力將水從下水庫抽到上水庫，並在需要時將儲水釋放提供水力發電。

今年8月，四川出現供電緊張情況，促使業界重新思考如何提高中國清潔能源供應韌性。事實上，四川佔中國水力發電總量約30%，有足夠餘電供應其他地區。但由於今年長江流域長期乾旱，導致該省無法提供與去年夏天一樣多的電力。

"Having sufficient energy storage so that we can save surplus electricity in good times and take it out in bad times is one way to stay resilient with regards to power supply," Fong says. In some regions in the US and Europe, 80-100% of power supply is generated by clean energy sources because they have adequate energy storage to cushion the energy intermittency.

As well as raising the total installed capacity of solar and wind power to 1,200 GW by 2030, China has set ambitious goals to increase the non-fossil fuel primary energy share to 20% by 2025 and 25% by 2030. "There are a lot more opportunities for the energy storage industry on the horizon if they continue with these growth rates," Fong notes.

To put the goals into perspective, the number of pumped storage hydropower energy projects approved this year is double the number of existing projects. The latest approval figures suggest that the development pipeline will grow by double next year.

In the near term, it can be expected that investment in pumped storage hydropower facilities will continue to rise. "This industry is relatively niche but capital intensive," says Fong. He points out that key players such as turbine manufacturers enjoy monopolistic advantages which translates into strong growth potential.

Globally, the demand for solar PV panels has been increasing and currently there are many foreign companies purchasing solar PV panels. China has already become the dominant supplier of different components across all manufacturing stages of solar panels, such as polysilicon, ingots, wafers, cells and modules.

In addition, China is home to the world's top ten suppliers of solar PV manufacturing equipment. China has also been instrumental in bringing down costs worldwide for solar PV, which has resulted in multiple benefits for clean energy transition.

Energy shortages brought about by a disruption of gas supplies from Russia have been a wake-up call for European countries to rethink their energy security. The crisis has reinforced the need for alternative sources of energy. Since Chinese firms now supply three quarters of the world's solar panels, they are poised to flourish as more countries seek to increase clean energy production.

他解釋道：「電網需要有足夠的儲能能力，好天時把餘電存儲起來，在需要時釋放，以滿足其他時段的高峰需求。是保持電力供應平穩的一種方法。在美國和歐洲的一些地區，80-100%的電力供應來自清潔能源，這是因為它們的電網擁有足夠的儲能能力，以緩解可再生能源的間歇性問題。」

除了計劃到 2030 年將太陽能和風能總裝機容量提高到 1200 吉瓦外，中國還計劃到 2025 年將非化石燃料一次能源的比重提高到20%，到 2030 年提高到 25%。他解釋說，如果繼續保持這些增長勢頭，儲能行業將有很大的發展機會。

從具體的目標來看，今年獲批的抽水蓄能水電項目數量是現有項目數量的兩倍。最新的批准數據表明，明年的項目開發目標將再翻一番。

抽水蓄能水電設施的投資將在短期內繼續增加，行業偏向於資本密集型，且渦輪機製造商等主要參與者享有壟斷優勢，這些行業特質將轉化為強大的增長潛力。

在全球範圍內，各國對太陽能光伏板的需求一直在增加，目前許多國外公司都在採購太陽能光伏板。在太陽能電池板製造的各個階段，中國已成為多晶矽、矽錠、矽片、電池和組件等不同組件的主要供應商。

此外，中國亦是全球十大太陽能光伏設備供應國之一，在降低太陽能光伏成本方面發揮了重要作用，為清潔能源轉型帶來多重利好。

今年以來，俄羅斯天然氣供應中斷導致的能源短缺危機，已經敲響了歐洲國家重新考慮其能源安全的警鐘，加劇了各國對替代能源的需求。中國公司現在供應全球四分之三的多晶硅，隨著越來越多的國家尋求增加清潔能源發電，預計相關產業在短期內迎來繁榮發展。

Carbon Trading the Next Step Towards Decarbonisation

Carbon trading is a market-based system that aims to provide economic incentives to encourage organisations to reduce their environmental footprint.

In China, carbon credit is known as carbon emissions allowances (CEAs). In 2021 CEAs were initially permitted to trade under a pilot scheme, when the National Development and Regulatory Commission (NDRC) approved trading in local exchanges of seven provinces/cities: Shanghai, Beijing, Tianjin, Chongqing, Hubei Province, Guangdong Province and Shenzhen.

One such carbon exchange is the Shanghai Environment and Energy Exchange (SEEE) which can host trading of CEAs registered at SEEE (also known as SHEAs). CEAs in different exchanges cannot be traded on a cross-exchange basis, hence these local exchanges function as segregated markets.

The European Union carbon credit market is more developed than the market in China. In June 2022, EU carbon permits stood at €84/t, as investors anticipated that demand for fossil fuel emissions could outweigh available supplies, while the price of carbon permits in China around the same time was only RMB59/t – a 10 times difference in the price for the same amount of CO2.

Fong believes that there is plenty of room for China to catch up with the EU in producing carbon credits to meet the carbon emission reduction targets. "More expensive carbon credits mean more incentive for clean energy producers to invest in critical infrastructure," he says.

For the 14th five-year plan, the Chinese government has set specific goals for decreasing energy consumption and promoting recycling, including assigning certain carbon-intensive industries targets to peak carbon emissions by 2030.

"One effective method these companies can use is to buy carbon credits to offset the emissions that they produce," Fong says. More carbon credit procurement not only will give companies in the clean energy industry a boost but also other industry players upstream.

碳交易市場 實現經濟脫碳關鍵一步

排放權交易是一種以經濟激勵的形式，鼓勵企業致力減排、控制污染經濟工具，有助於達致污染物減排的目標。

中國的排放權交易市場採用碳排放配額（CEA），2021年，CEA初步獲准在上海、北京、天津、重慶、湖北、廣東、深圳等七個省市的地方交易所進行試行交易。

上海環境能源交易所（SEEE）就是指定的排放權交易所之一，能安排在SEEE註冊的CEA（也稱為 SHEA）進行交易。目前而言，各地方碳排放交易所各自經營，本地參與者不能於其他交易所交易CEA。

相比之下，歐盟碳排放權交易市場比中國市場更發達。2022年6月，由於投資者預計化石燃料排放需求可能超過可用供應，歐盟碳排放許可證價格一度漲至84歐元／噸，而同期中國碳排放配額價格僅為59元人民幣／噸，以相同數量的二氧化碳排放的價值計算，兩者相差10倍。

方先生認為，中國在產生碳信用以實現碳減排目標方面有很大的空間可以趕上歐盟。海外更昂貴的碳信用額，意味著清潔能源生產商更有經濟動力去投資於關鍵電網基建設備及技術。

在「十四五」規劃中，中央政府制定了減少能源消耗和促進循環利用的具體目標，包括將某些碳密集型行業的目標定為到2030年達到碳排放峰值。

「抵銷這些高污染行業的高碳足蹟的其中一種方法便是從清潔能源企業購買更多的碳信用，這不僅有利於清潔能源企業，也有利於上游的其他行業參與者。」

The Impact of Coal-Fired Power Pricing Reform

In October 2021, the NDRC announced a reform to liberalise pricing in the state-controlled power market. Under the new trading mechanism, the trading price of coal-fired power is determined by market forces within a 20% trading band of the benchmark on-grid tariff, up from the previous 10-15%. Under this scheme, heavy industrial and commercial users must buy electricity at market prices.

As well as other energy market reforms, Fong believes that electricity pricing liberalisation will further accelerate the transition to clean energy by driving businesses and consumers to purchase clean energy as an alternative to coal-fired generated energy.

The Power of Now

China Tonghai Asset Management is managing two equity funds, namely the China Tonghai China Focus SP and China Tonghai Greater China UCITS Fund, that have an overweight allocation to China's growing new energy sector, which Fong believes will yield healthy rates of return for investors in the medium-term.

Apart from a top-down approach, he says the company's analyst team also employs bottom-up analysis to help fund managers pick stocks with solid fundamentals and ideally, market leadership by looking at their performances, valuations, competitive landscape and market outlook.

"Some companies may make claims to be environmentally friendly or exaggerate or misreport their carbon reduction progress through 'greenwashing' tricks, and this is something to watch out for when doing due diligence and research," Fong cautions.

燃煤電價改革的影響

2021年10月，國家發展和改革委員會宣布改革國家控制的電力市場價格。在新的交易機制下，煤電交易價格由市場力量在基准上網電價的 20% 的交易區間內確定，此前為 10-15%。根據該規定，重工業和商業用戶必須以市場價格購買電力。

與其他能源市場改革一樣，方先生認為，電價市場自由化將推動企業和消費者購買清潔能源來替代燃煤發電，從而進一步加速向清潔能源的轉型。

抓緊投資時機

目前，中國通海資產管理管理著兩隻股票基金，即中國通海中國焦點 SP 和中國通海大中華 UCITS 基金，重倉新能源板塊，他認為現時的投資策略中期能為投資者帶來健康回報。

除了從宏觀角度分析，公司的分析師團隊採用自下而上的分析，仔細分析目標公司過往業績、估值、競爭格局和市場前景，幫助基金經理揀選基本面穩固、理想情況下具有市場領先地位的股票。

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When taking into consideration data provided by companies in the clean energy sector, they can be cross-referenced and reconciled with figures from the State Environmental Protection Administration of China, he says. Meanwhile, a new breed of carbon credit rating agencies has emerged. "They provide independent, third-party analysis to help investors cut through the complexity of carbon accounting and validate the authenticity of carbon credit trading activities," Fong explains.

"When we compare the promises made in the 13th five-year plan with the actual deliverables, it's clear that many have lived up to expectations," Fong adds. The 14th five-year plan has set an 18% reduction target for "CO2 intensity" and 13.5% reduction target for "energy intensity" from 2021 to 2025. "These targets are more ambitious than previous ones, but policymakers are confident that it's a mission possible," says Fong. M

Note: The interviewee is SFC licensed (Types 1, 4 and 9)

Jimmy Chow
Journalist

他也提到，在分析的過程裡團隊會特別注意「漂綠」風險。某些公司可能誇大了其對環保和減排的積效，因此，在持股前會進行徹底的盡職調查。但他補充，在分析清潔能源領域企業提供的數據時，他們都盡可能對國家環境保護局的數據，此外，新興的碳信用評級機構還可以提供獨立的第三方分析，幫助基金經理簡化碳核算工作，從而驗證碳信用交易活動的真實性。

最後，方先生總結道：「我們分析了2016年到2020年的『十三五』規劃的落實情況，事實上有不少的承諾都已經實現起來。『十四五』規劃設定的目標是從2021年到2025年實現碳排放降低18%，能源消耗降低13.5%。我認為這些目標很可能會實現的。」M

註：受訪者為證監會持牌人士（第1、4及9類牌照）

Jimmy Chow
記者