

2013 China installed 12.92 GW

Late April 2014, China’s National Energy Administration (NEA) announced that in total 12.92 GW of solar PV capacity were installed in 2013. [Note: This figure is incomplete, since data from provinces like e.g. Jilin and Tibet were not included.] According to the official statistics, 12.12 GW were falling into the category of large-scale, whereas the remaining 801 MW were distributed solar PV projects. Last years outperforming provinces were Gansu (3842 MW); Xinjiang (2320 MW) Ningxia (1183 MW) and Inner Mongolia (1133 MW), i.e. these four provinces out of in total 22 installed 65% of all large-scale power plants. In comparison, in the same provinces less than 50 MW of distributed solar PV (0.3; 7; 40; 0.6 MW) were installed. Given the central governments intention to strongly promote distributed solar PV compared to utility-scale power plants, last years top 3 provinces were Zhejiang (165 MW), Guangdong (115 MW) and Hebei (74 MW), which accounted for approx. 43% of the total installed distributed power. In the context of the above, AECEA is looking forward how e.g. Gansu province which achieved a record installation of 3.8 GW last year, shall according to its 2014 quota for large-scale system slow down to a mere 500 MW and whether some policy adjustments will follow in the next couple of months. To date, early signs are already visible that provincial quotas for large-scale projects are about to be exceeded.

Domestic Deployment Trends

2013 Market Development – Regional Trends



Against the background that in January 2014 the NEA set a target of 8 GW distributed power for 2014, thus aims at a 10 times increase YoY. However, given the administrative, financial and operational complexity of distributed solar PV compared with large-scale ground mounted solar PV, AECEA is not surprised that in the first months of 2014 distributed solar installations fell very short of expectations. Therefore, in order to ensure a realization of the 8 GW target, the central govt. is expected to issue further regulations designed to facilitate a faster execution of such projects in the remaining months of 2014. AECEA anticipates that such supplementary regulations will be announced in the remaining weeks of June. Assuming the to be released supplementary regulations will indeed allow a faster execution of distributed projects, AECEA remains confident that the 8 GW target could be achieved. As a first sign, the State Administration of Taxation of China announced on June 11th to have adjusted its tax policy for distributed solar PV effective July 1, 2014.

Policy & Regulatory Landscape

70 GW by 2017 – Target Regions for Solar PV Deployment



China aims at 70 GW of Solar PV by 2017

In a further attempt to address China’s nationwide prevailing air pollution, already in March this year the National Development and Reform Commission (NDRC) approved an “Air Pollution Prevention Plan”. Released early May, the focus of this plan is China’s power sector and numerous targets e.g. emission reduction, grid extension, coal consumption, etc. among others were set. Accordingly, this “plan” stipulates a 70 GW solar PV power generation capacity target by 2017. The target itself shall be made up equally by large utility-scale and distributed solar PV power plants and identifies as well key target regions for both types of applications.

The “new” official target represents a 100% increase of what China aimed so far at by the end of 2015, which coincides with the ongoing 12th Five-Year-Plan (2011-2015). As of today, China’s long-term target stipulated in official documentations, i.e. 50 GW by 2020 remains unchanged, although in discussions with governmental representatives a 100 GW target by 2020 is considered. Given the new target of 70 GW by 2017, AECEA is of the opinion that by the end of 2020 China could be home to a total installed solar PV power generation capacity of 130-150 GW. However, taking into account the country’s pressing need for clean power generation capacities and China’s Electricity Council recent announcement that possibly by 2030 no further coal fired power plant has to be constructed; an impressive 200 GW by 2020 doesn’t appear to be too unrealistic.

China encourages the society to invest in 30 distributed solar PV projects

Mid May, China’s National Development and Reform Commission (NDRC) published an official document outlining in total 80 energy, information, and infrastructure projects explicitly encouraging the “society” to invest in. [Note: the word “society” is being taken to mean “private investors which includes both domestic and foreign”.] The 80 projects cover solar, hydro, and wind power, oil and gas pipelines, railway and subway lines.

Responsible for US\$3 trillion of outstanding debts as of June last year, related investments undertaken by state-owned companies and provincial and city governments, have been criticised by analysts for being largely inefficient. Therefore, allowing more private investment in China’s centrally planned economy is an important part of the government’s plans to reduce its own intervention and let market forces play a bigger role. The 80 projects are seen as parts of reforms to open and increase privatisation in previously monopolised infrastructure sectors. The official statement suggests a further opening of the energy and infrastructure sector in future.

Interestingly, out 80 projects, more than half are energy-related and a staggering 30 projects are so-called “distributed solar PV project demonstration zones”. The investments shall be used for both construction as well operation and could be undertaken in the form of Joint Ventures, wholly owned entities, or franchise. The significant proportion of distributed solar PV projects reflects not only their growing importance on China’s energy agenda, but as well the political pressure to seek near-term solutions for the myriad of constraints faced by investors aiming at developing such projects. Given the fact that the central govt is clearly favouring distributed solar PV, however the lack of domestic experience, e.g. the Golden Sun program was based on a different business model compared to today, whereas today such projects are subject to a FIT and therefore have to achieve the maximum possible in terms of generated kWh, in order to achieve a certain IRR.

AECEA argues that all 30 distributed solar PV projects combined in comparison to subway line No: 16 in Beijing which is open for the “society” too, undoubtedly requires significantly less investment. Therefore, AECEA is of the opinion that the governments intentions to offer 30 distributed solar PV projects is not necessarily a lack of funding, but rather the governments immediate need to learn how e.g. foreign companies finance, plan, design, construct, operate and maintain such projects, given their multiple years of experience compared to their domestic peers. The high-level of political attention given to all 80 projects, it is fair to assume that it is in the interest of the government to provide relatively “risk free or safe bet” projects for both domestic and foreign companies.

Manz is powering a 1 MW CIGS Thin Film Power Plant in Yunnan Province / China



The German manufacturer of thin film technologies and applications owns and operates a 1 MW CIGS thin film power plant near the city of Kunming, the provincial capital of Yunnan, China since spring 2013. According to first results the power plant achieves a single digit higher energy yield compared to crystalline silicon based applications. A lower temperature coefficient and better operating under diffuse light contributed to these results. In particular the latter, since “Yunnan” literally means “Land South of the Clouds”.



China's CPV Industry too is facing consolidation



In 2011, the Sichuan based Hanlong Solar Energy Group announced to invest together with Tongwei Solar Energy (Chengdu) and Songleshuzihua Solar Energy approx. EUR 1 bln into a 2 GW HCPV fab between 2013 and 2015. Subsequently, a number of so-called strategic partnerships were announced along with the intention to built HCPV power plants in provinces across Gansu, Yunnan and Inner Mongolia. The detention of Mr Liu Han, the head of the Hanlong Group and former mining tycoon early 2013 motivated local media in April/May this year to undertake a site visit to the supposedly large HCPV fab which appeared to rather resemble a "Potemkin Village". A few weeks ago, Mr Liu was sentenced to death for leading a mafia-style gang.

AECEA – Internal Affairs

Upcoming Activities *****

A "Critical Assessment of China's National Distributed Solar Photovoltaic Policy" will be presented by AECEA during the Asian Development Bank's (ADB) upcoming annual flagship event the "Asia Clean Energy Forum 2014" in Manila, the Philippines on June 20th.



AECEA will be speaking during the approaching Intersolar North America in San Francisco on June 7th in the session on Global PV Markets: Asia and give a presentation on "China's Solar PV Market Prospects until 2015 and Beyond".



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Recent Activities *****

AECEA – Internal Affairs



AECEA was invited by the Hong Kong based HQ of Credit Lyonnais Securities Asia (CLSA), in order to do give a presentation concerning "China's Domestic Solar PV Market Prospects until 2015 and Beyond" during CLSA's annual investor conference in Beijing on May 15th.

Bank of America / Merrill Lynch (BAML) commissioned AECEA, in order to advise Hong Kong based asset manager, institutional & private equity investors, all clients of BAML, on the recent China solar PV market dynamics in the global context during their so-called "China Energy & Clean Environment Corporate Day" on May 9th. Greatest interest was regarding China's distributed solar PV policy and its likely impact on the future domestic market demand in the near term.



Company Profile

Frank Haugwitz is an independent solar energy consultant based in Beijing since 2002. In his early years in China he was seconded by the German govt. and involved in a bilateral solar / PV energy technical cooperation program. Following this assignment he was responsible for the renewable energy component of the EU-China Energy & Environment Program until the fall of 2009. Since then he has been consulting foreign enterprises and international organizations on the development of renewable energies in general and solar / photovoltaic in particular in China. Since early 2010 he works for the organizer of Intersolar as their Head of Intersolar Conference Development.

From late 2009 until August 2012 he worked as a director in the Deutsche China Consult Co. Ltd. (HK) and in October 2012 he founded his company "Asia Europe Clean Energy (Solar) Advisory Co. Ltd. (AECEA)". His services include working with individual clients to apply his extensive China photovoltaic energy-focused insights to their specific needs. Industry experience and in-depth analysis shall assist strategy development and corporate decision making. Focus is on the regulatory framework conditions, policy, as well market and business development. His advisory services provide objective and independent research.

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