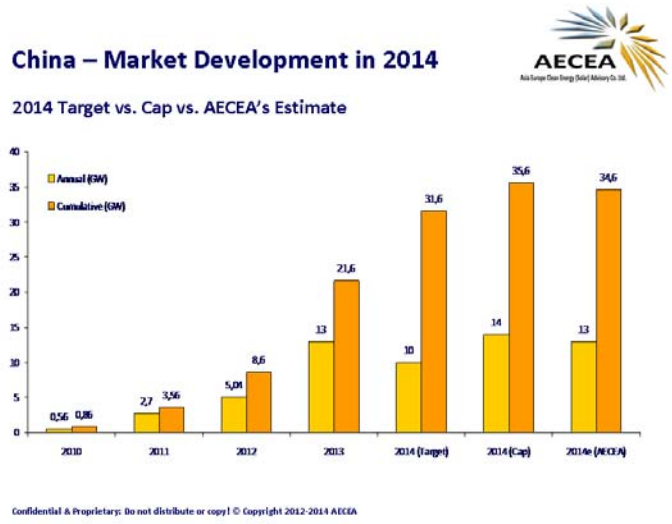
July 2014 – Briefing-Paper – China Solar PV Development

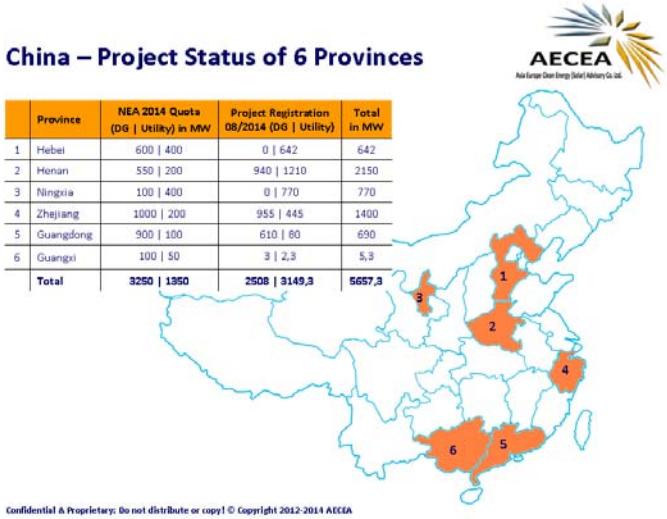
Back to Square One – China aims at 10 GW instead of 14 GW in 2014

Mid June, upon reviewing the past half year progress, Mr Wu Xinxiong, head of China's National Energy Administration (NEA), during a working session announced that the "now final" solar PV target shall be 10 GW in 2014. Interestingly, the official announcement did provide insufficient explanation or reasoning why the NEA reduced its annual target by 30% to now 10 GW instead of 14 GW as officially announced by as well NEA in January/February this year. Until recently, after some confusion earlier this year whether China aims at 10 or 14 GW in 2014 and upon official communication the industries common understanding was that NEA has set a quota of 8 GW for distributed solar PV and 6.05 GW for utility-scale solar PV, thus amounting to in total 14.05 GW this year. This "back-tracking" is basically that the 8 GW distributed solar PV quota has been reduced by 50% to just 4 GW and is possibly a reflection of that that the central government has somewhat under-estimated the complexity hampering a fast and smooth execution of distributed solar projects in general. The fact that in 2013 out of in total 13 GW installed, merely 800 MW of distributed solar project were realized and the recent 8 GW would have represented a 10 x times increase YoY, which possibly proofed to be too ambitious, hence the recent reduction to just 4 GW. According to AECEA's understanding, the "now" 10 GW is a "target", i.e. must be achieved and the former 14 GW target is to be understood a "cap", i.e. any project approved and exceeding the 14 GW "cap" won't be eligible for any Feed-in-Tariff (FIT) payments. Taking into account the volume of projects seeking official approval and e.g. EPC contractors or component suppliers in H1/2014, AECEA is of the opinion that the "now" official 10 GW target will be exceeded by up to 3 GW.



Six Provinces and Autonomous Regions have Disclosed their Respective Project Registration Status

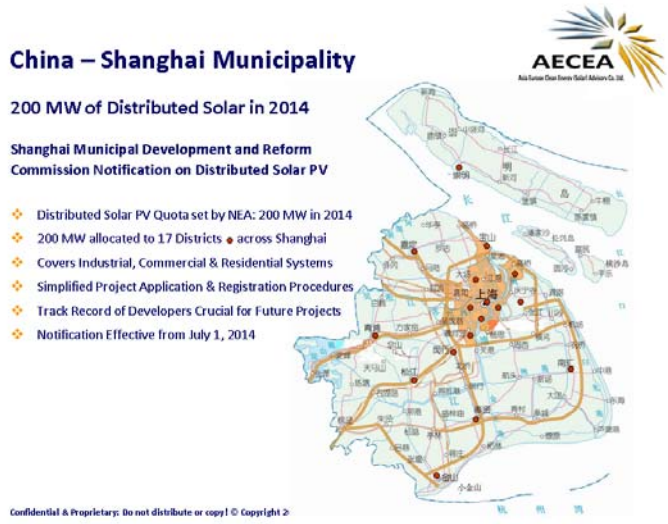
Early August the Development and Reform Commissions of Hebei, Henan, Guangdong and Zhejiang Province, as well of the Autonomous Regions of Guangxi and Ningxia have disclosed the status of project registration status. The clear outperformer measured by the total volume of projects apparently have obtained official approval is Henan with a staggering 2150 MW, a province which distributed and utility scale projects combined should have made up only 750 MW in 2014. At this stage, AECEA remains cautious regarding the accuracy of these data, since some by far exceed the official allocated quota and more important the current actual project implementation can not be entirely verified. However, assuming that these data are indeed correct and all projects will be realized by the end of this year, it would mean that just 6 provinces/autonomous regions would make up a share of approx. 56% to this years 10 GW target. Considering in particular Xinjiang, Gansu, Qinghai, Inner Mongolia, Shanxi, Jiangsu and Shandong, all provinces with either good environmental conditions, additional local supplementary regulations, and supportive local governments, AECEA is of the opinion that this years installations may indeed reach the 14 GW cap. At this stage it remains interesting to see how the central government will deal with over-ambitious provincial governments knowingly exceeding their allocated quota.



	Province	NEA 2014 Quota (DG | Utility) in MW	Project Registration 08/2014 (DG | Utility)	Total in MW
1	Hebei	600 | 400	0 | 642	642
2	Henan	550 | 200	940 | 1210	2150
3	Ningxia	100 | 400	0 | 770	770
4	Zhejiang	1000 | 200	955 | 445	1400
5	Guangdong	900 | 100	610 | 80	690
6	Guangxi	100 | 50	3 | 2,3	5,3
	Total	3250 | 1350	2508 | 3149,3	5657,3

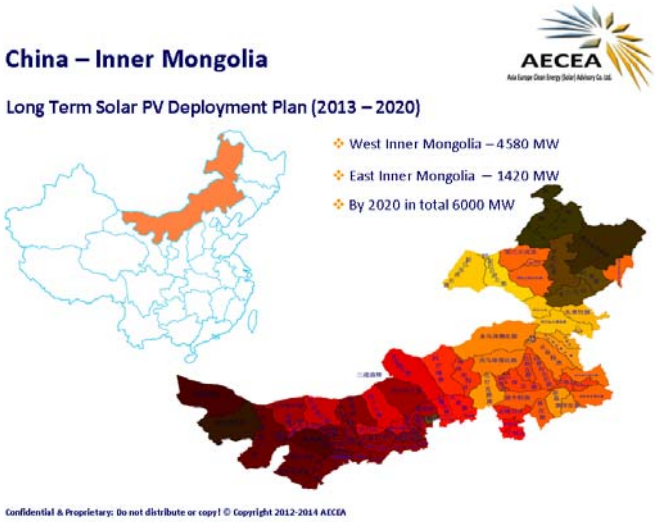
Shanghai Municipality Issued Notification Concerning Distributed Solar PV in 2014

Shanghai is one of the latest examples on how provincial governments and municipalities are actively promoting the deployment of in particular distributed solar generation in their respective jurisdictions. The main driver is to ensure that they will meet their annual targets or quotas set by the National Energy Administration (NEA) earlier in January/February this year. Effective from July 1st, 2014, the Development and Reform Commission of Shanghai Municipality has issued relatively fairly comprehensive guidelines designed to ensure a smooth project application and registration process. Interestingly, the notice stipulates that corresponding district and county governmental entities shall not approve more projects than the fixed project quota allows them. Furthermore, project developers are advised to realize theirs projects they have applied for, otherwise a non-execution of projects may have an impact on intended future projects. AECEA is of the opinion that the "message" to developers possibly derives from the fact that Shanghai relatively late issued such guidelines, given the fact that only 5 months remain until the end of 2014. However, 200 MW spread across 17 districts, leaves just 12 MW per district and is believed to be doable. In order to be on the safe side, the notice stipulates that so-called "demonstration projects" shall be included in this years 200 MW quota.



Inner Mongolia Releases Long-Term Solar PV Development Plan until 2020

Although already prepared in December 2013, the Development and Reform Commission (DRC) of the Inner Mongolia Autonomous Region officially released its "2013 – 2020 Solar Energy Development Plan" late July 2014. Accordingly, this "Plan" covers the remaining years of the ongoing 12th Five-Year-Plan (2011-2015) and the entire upcoming 13th Five-Year-Plan (2016-2020). Home to just around 15 PV companies with operational manufacturing capacities, but measured by the local solar irradiation levels (1331-1722 kWh/m^2/a), Inner Mongolia claims to be only second to Tibet. Interestingly, this official "plan" uses data provided/generated by NASA. Given Inner Mongolia's sparsely populated area, i.e. population density is just approx. 20 person per km^2 across 1.2 Mio km^2 (12% of China's total land mass) the future of local solar PV deployment will be in the form of large-scale ground-mounted PV power plants, whereas distributed solar PV will play a rather negligible role.



By the end of 2012, Inner Mongolia's total installed PV power generation capacity amounted to just 272 MW and 107 MW of large-scale and distributed solar PV respectively. However, by the end of last year, in particular the large-scale segment grew to 1133 MW, whereas the distributed segment witnessed an increase of just 53 MW. In the course of 2014, Inner Mongolia is expected to additionally 50 MW of distributed and 500 MW of large-scale systems. According to the "Plan" Inner Mongolia's DRC has set an interim target of 4 GW by 2017 and a final target of 6 GW by 2020, the latter represents approx. 4-5% of the total installed PV power generation capacity in China of 135 GW estimated by AECEA.

PV Project Development in China's Xinjiang Autonomous Region

Late July, AECEA went on a field trip to Hami in Xinjiang, one of the "most favoured solar deployment regions" throughout the country. Aware of its local conditions in terms of solar irradiation levels, the local government set up the 25 km^2 large Shichengzi PV Industry Park north of the city, next to a former oil base. The park itself has been designed to be large enough to accommodate 690 MW of PV power generation capacity. According to the PV Park manager, to date, 600 MW have been awarded out of which 560 MW are poly-crystalline, 20 MW thin-film (to be constructed by Hanergy) and 20 MW of HCPV currently under construction by the local Chinese developer Focusic. Early 2014, China's National Energy Administration (NEA) set the total target for Xinjiang in terms of additionally installed PV power generation capacity in 2014 at 850 MW (800 MW large-scale, 50 MW distributed) out of which 50 MW were allocated to Hami.

Power generated from all PV power plants will first be transmitted to a 35 kV station in the centre of the park from which it will be further transferred to a 220 kV booster station from where it will be send to a long-distance 750 kV HVDC line in the vicinity of the park. The long-distance HVDC line stretches from Xinjiang's Urumqi, Turfan, Hami to finally Jiuquan in Northern Gansu.

The already approved construction of an additional long-distance HVDC line via Xinjiang to Chengdu / Sichuan is expected to further drive demand for PV deployment in the Hami region. In this context, given the results achieved so far with the Shichengzi PV Park the Hami government aims to set up a second PV Park in the near future. Corresponding preparatory work has been initiated according to the PV Park manager. The timeline of the second park is still unclear since the establishment of such a PV park requires the approval of Beijing. It could be that the approval might be granted earlier than anticipated, because early July, China's NEA requested its local counterparts to identify areas suitable for "very large-scale" deployment of PV. Taking into account Hami's favourable local environmental conditions and its strategic location next to two long-distance HVDC lines which shall help to solve the currently prevailing grid curtailment puts Hami certainly in a good position to get its green light for its second PV Park.

AECEA – Internal Affairs

Upcoming Activities **********

AECEA will be at the upcoming Intersolar South America in Brazil / Sao Paulo from August 26-28, 2014.

Recent Activities **********

AECEA – Internal Affairs

AECEA spoke during the recent Intersolar North America in San Francisco on June 7th in the session on Global PV Markets: Asia and gave a presentation on "China's Solar PV Market Prospects and Beyond 2015".

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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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→ Previous versions of the "Briefing Paper – China Solar PV Development" are available at http://www.aecea.com.de/downloads.html

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