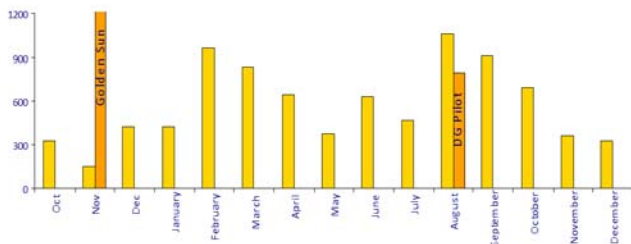


In 2013 approx. 1/3 of global solar PV installations were realized in China

In 2013, China installed approx. 13-14 GW (2012: 5.04 GW), i.e. more than any other country in a single year ever before. According to AECEA, the reasons why the official national target of 10 GW as announced in January 2013 was exceeded by approx. 3-4 GW are the following. Firstly, projects tendered during Q4/2012

China Solar PV Domestic Market Development (Q4/2012-Q4/2013)



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were not facing any FIT reduction as Q4/2013 projects, thus these projects were executed in 2013. Secondly, in November 2012 central governmental institutions approved the last batch of so-called Golden Sun projects amounting to 2834 MW. Accordingly, the deadline of these projects was June 30, 2013, but eventually was extended twice until the end of 2013. Thirdly, in August the National Development and Reform Commission (NDRC) and the National Energy Administration (NEA) announced the approval of in total 1823 MW so-called “Solar PV Distributed Generation Demonstration Projects” out of which 793 MW of projects were scheduled to be realized by December 31, 2013. Fourthly, in August/September 2013 new FIT’s effective from January 2014 onwards were announced and triggered a year-end-rallye. Fifthly, despite ongoing trade negotiations which created an atmosphere of uncertainty in the Chinese market, combined monthly tendered projects did not show any sign of a slowdown throughout the entire year.

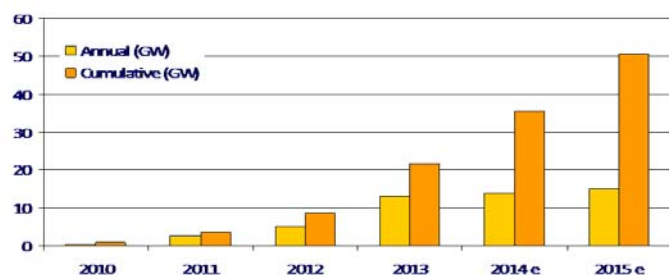
Overall, last year China’s domestic market development is characterized by three main factors, a) in terms of installations, utility-scale ground mounted systems dominate; b) just three provinces (Gansu, Xinjiang, and Qinghai) managed to witness installations constituting a combined market share of approx. 42-45%; and c) the share of distributed generation is growing, however so far confined to eastern provinces and largely the result of the national Golden Sun programme.

2014 is China’s Year of the Horse – Will China’s solar PV domestic market gallop away?



The 2014 Year of the Horse is associated with “wood”, i.e. industries associated with wood like retail, forestry, textiles, and agriculture among others are expected to perform well according to fortune tellers. Since wood fuels flames as well, industries related to the element “fire” are expected to do well as well and this does includes electricity, i.e. as well solar Photovoltaic!

China Solar PV Market Development and Prospects (2010-2015)



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Until mid January 2014 various Chinese central governmental entities announced different solar PV deployment targets for the year 2014. The announced installation targets ranged from 8 to 14 GW. Eventually, the National Energy Administration (NEA) officially announced a 14.05 GW target, divided into 8 GW (distributed generation) and 6.05 GW (utility-scale ground-mounted) to be installed in the course of 2014. The government’s direction to promote distributed generation vs. utility-scale projects is obvious; given its 60% share of 14.05 GW. Although project developer support the governments drive towards distributed generation, however AECEA is of the opinion to tackle corresponding administrative procedures do pose a challenge at this stage of market development, i.e. to realize a distribution generation type of project requires considerably longer lead time compared to utility-scale projects, were developer benefit from experience gained the last two years.

Interestingly, because for the first time, the NEA released a breakdown of the 14.05 GW national annual target into provincial targets which are divided into both types of project categories (DG and utility-scale). The intentions of this annual target breakdown are obvious, however it remains to be seen how e.g. Gansu province will scale down from approx. 2.6 GW (2013) to just 550 MW in 2014.

In an attempt to ensure a realization of 8 GW distributed generation projects, early February 2014 the NEA released a list of 81 so-called “New Energy Demonstration Cities” and 8 so-called “industrial demonstration zones” spread across 28 and 8 provinces respectively. Accordingly, by the end of 2015 which coincides with the end of the current 12th Five-Year-Plan (2011-2015) these cities and zones are required to realize their respective mandatory targets in terms of e.g. XX-MW of solar PV installations and/or share of installed renewable energy power generation capacities.

Today, according to AECEA’s assessments, China is well on the track to realize one year ahead of time its national target of 35 GW by 2015 as stipulated in the 12th Five-Year Plan for Solar Energy Development (2011-2015). Equally impressive, AECEA estimates another 14-15 GW of new installations in 2015, i.e. most likely China will have 50+ GW of total installed solar PV power generation capacity by 2015. Hence, today’s China’s official national solar target of 50 GW by 2020 will be reached even 5 years ahead of schedule. According to AECEA’s information, China is considering a doubling of its 2020 target, i.e. by 2020 a minimum of 100 GW shall be installed. Taking above background into account, not only the 2014 Year of the Horse could indeed make the domestic Chinese solar PV market galloping ahead of all other global markets, but very likely as well in the longer-term.

China’s continuing Grid Curtailment Constraint requires NEA to strengthen its supervision

China’s National Energy Administration (NEA) has officially recognized that the existing grid infrastructure is facing massive curtailments due to its limited capacities. So far, were in recent years rather wind project developer affected, today, as a consequence of the surging domestic market, solar PV project developer increasingly as well, in particular, throughout western regions endowed with high solar radiations levels. In light of a sustained curtailment problem, NEA estimated that it may take another 2-3 years to basically solve this issue.

National Energy Administration investigates Grid Curtailment in selected Provinces in 2014



In the context above, mid January this year the NEA send a supervision team to the selected provinces Hebei, Gansu and Jilin, in order to investigate the true extend of the real situation on the ground. Is Jilin of lesser attractiveness for solar project developers due to lower levels of solar radiation, Hebei and Gansu in particular are very attractive for a number of reasons. Hebei literally surrounds Beijing and is home to almost 50% of China’s crude steel production output, numerous cement factories and corresponding power generation assets, all significantly contributing to Beijing’s persistently high levels of air pollution.

According to a recent Greenpeace China Air Quality report, Hebei itself is China’s most air polluted province with six of the 20 worst polluted cities are located in Hebei. As a consequence, from Beijing’s perspective, to ensure that all renewable energy power generation capacities deployed in Hebei are connected to the grid and all generated electricity is purchased in full is very high on the political agenda. State Grid announced to invest into four additional transmission lines during 2014, and two lines shall lead through Hebei.

AECEA is of the opinion, that the selection of Hebei to be included in the afm investigation is no coincidence, since according to initial findings last years grid curtailment in Hebei increased almost three-fold YoY.

Solar Energy Technology singled out by Ministry of Science and Technology in 2014

Early January 2014 the Chinese Ministry for Science and Technology (MOST) announced during its annual working meeting that through comprehensive measures a number of strategically important technologies achieved competitiveness in the global market. Importantly, among a dozen of technologies covering e.g. communication, automotive, health, oil and gas exploration, which all are subject to enjoy extensive research support throughout 2014 and beyond, the single only “renewable energy technology” mentioned is solar energy! The fact that solar energy technology were singled out by MOST, leads to the reasoning that the still “relatively large dependency on imported upstream technologies” is of concern and shall be addressed through intensified domestic efforts. AECEA expects that in the near future MOST may release its 2014 solar research agenda. Today, research undertaken by various designated universities, academies, both national and provincial labs etc. covering cell technologies, power electronics, control and BOS components, manufacturing equipment, test equipment, system engineering, etc. including field test programmes for which MOST has earmarked a budget of approx. EUR 60 Mio annually. During the course of the 12th Five-Year-Plan 2011-2015 MOST has set aside a budget of approx. EUR 120 Mio in order to support four major projects in the framework of the “National High Technology Research and Development Program 863”.

Solar PV significantly support China’s Aim of 100% Nationwide Power Supply by the End of 2015

By the end of 2012, China was home to approx. 2.73 Mio people which had no access to electricity. In order to achieve the national target of 100% electrification by the end of 2015, i.e. each and every Chinese citizen shall have access to energy. Against this background, in the fall of 2013 the National Energy Administration (NEA) released a three-year plan (2013-2015) indicating in total 583 projects for either grid extension or off-grid solar PV systems requiring an investment amounting to approx. EUR 3.5 bln. Accordingly, investing approx. EUR 396 Mio helped to supply power by means of solar PV to approx. 1.02 Mio in 2013 alone. Last year, in addition to projects undertaken in the framework of the “Golden Sun Programme”, numerous local power utilities implemented solar PV projects within their respective local and regional operations. In the remaining years until the end of the 12th Five-Year Plan (2011-2015), a further 100.000 people shall benefit from single-standing solar PV power plants mainly located throughout Western China.



Jiangsu Zeversolar New Energy Co. Ltd (Part of SMA Group) cooperates with IBC Solar on Solar Rooftop

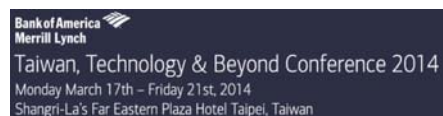


Jiangsu Zeversolar, in which the German inverter manufacturer SMA acquired a 72.5% majority share in March 2013, has recently teamed up with the German company IBC Solar, in order to finalize the installation of a 400 kW rooftop system at Zeversolar’s factory in Yangzhong, Jiangsu province. The project received official approval in November 2013 and was scheduled to be connected to the grid by the end of January 2014. The project features the deployment of Zeversolar’s inverters, whereas IBC Solar provided the overall system design and engineering. The project itself is designed that all generated power will be used internally.

AECEA – Internal Affairs

Upcoming Activities *****

The European Photovoltaic Industry Association invited AECEA to participate in a panel on the “Global Solar PV Market – Focus Asia”. The panel is part of EPIA’s Annual Market Workshop taking place in conjunction with EPIA’s Annual General Meeting in Brussels on March 6-7, 2014.



Invited by Bank of America / Merrill Lynch (BAML), AECEA will speak at BAML Taiwan’s flagship conference on “Global Solar PV Market Trends and the Role of China” and host 1x1 investor meetings.



Recent Activities *****

AECEA was invited by the Hong Kong based HQ of Credit Lyonnais Securities Asia (CLSA), in order to do a conference call concerning the “China Solar Downstream Market Development Prospects” on February 12th.



Early February, AECEA conducted a conference call regarding “Global Solar Policy Outlook and Possible Regional Solar PV Demand Implications in 2014/15” with Fortress Investment, Singapore.



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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