Study

MARKET INFO INDIA – PHOTOVOLTAICS

dena-Market Information System

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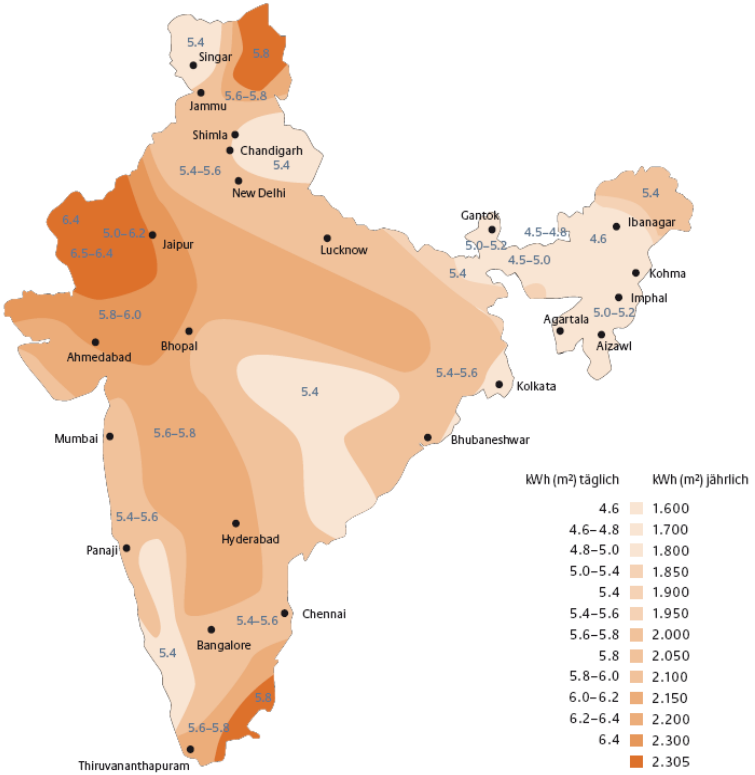
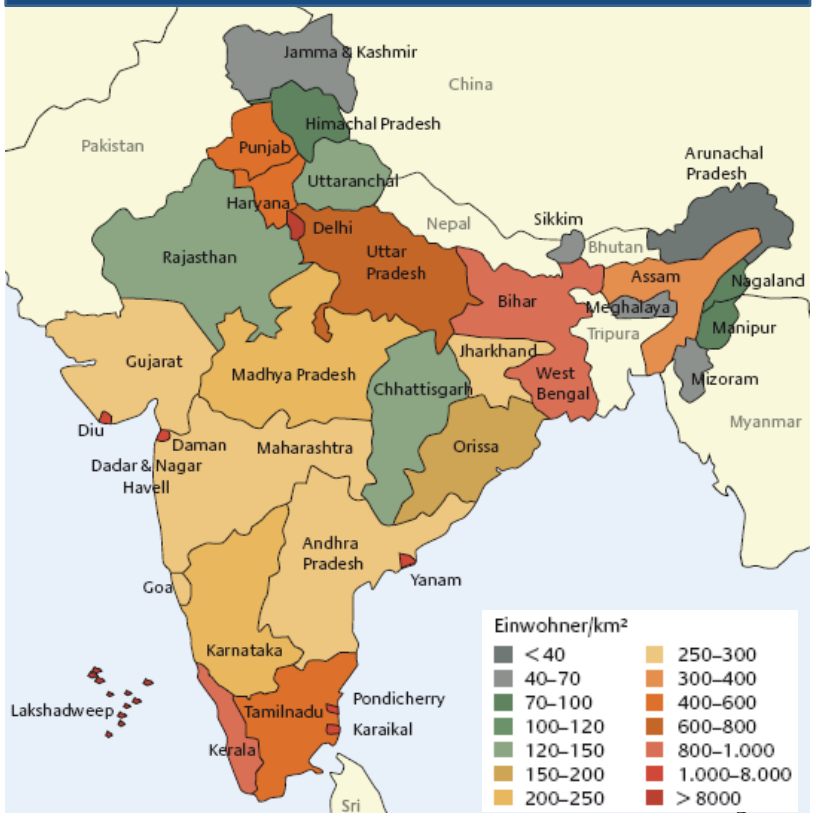
SOLAR IRRADIATION & POPULATION DENSITY

Annual global solar irradiation



Source: dena (2011/2012)

Population density



Source: dena (2011/2012)

BASIC DATA

General basic data (2014)			
Area	3,287,263 km²	GDP (est.)	127,938 bn INR (~1,642bn €*)
Population (2013 est.)	1,220 million	GDP per capita (est.)	101,563 INR (~1,303 €*)
Language	Hindi 41 %, Bengali 8.1 %, Telugu 7.2 %, Marathi 7 %	GDP growth (est.)	5.4 % (2014), 6.4 % (2015)
Government	Federal republic	Inflation (est.)	8 %
Administrative division	28 states and seven union territories	Unemployment rate	4.7 % (2012/13) official

Basic energy market data (2012)	
Electrictiy consumption (total)	772 TWh
Total electricity import (2009-2010)	5.61 TWh
Total electricity generation (2013/14)	967.2 TWh
Electricity price (industrial /Tamil Nadu 2012 - 2013) Electricity price (industrial /Karnataka 2012 - 2013)	6.38 INR / kWh (9.2 € ct / kWh*) 5.1 INR / kWh (7.4 € ct / kWh*)
Electricity price (residential /Tamil Nadu 2012 - 2013) Electricity price (residential /Karnataka 2012 - 2013)	3.79 INR / kWh (5.5 € ct / kWh*) 4.3 – 5.1 INR/ kWh (6.2 € ct / kWh – 7.4 € ct / kWh*)
Share of renewable energy (electricity consumption)	+ 11 %
Increase of electricity consumption (2010 - 2020)	+ 82 %
Global solar irradiation	2,000 kWh / m² a

* Annual average exchange rate 2013 of the European Central Bank (ECB): 1Euro = 77.93 INR

Sources: AHK (2012), CIA (2014), dena (2011/12), GTAI (2014), Powersector (2014)

PHOTOVOLTAIC MARKET INDICATORS

Indicators					
Market size (annual installed capacity)	2011: 380 MW	2012: 650 MW	2013: 950 MW	2014e: 850 MW	2015e: 1,350 MW
National PV target (2022)	▪ 22,000 MW (thereof 20,000 MW on-grid and 2,000 MW off-grid) ▪ PV target by 2017: 10 GW, by 2019: 15 GW				
Main market drivers 2014/ 2015	▪ The Indian Government opts for large-scale PV power plants, which are promoted by the Jawaharlal Nehru National Solar Mission (also called National Solar Mission – NSM) and state policies that utilize either federal means of promotion or other alternatives to NSM (e. g. Rajasthan, Karnataka, Gujarat etc.). ▪ Since 2013, predominantly small and rooftop PV systems have been promoted through net metering, available for electricity consumers with a distribution network connection.				
PV support schemes 2014	▪ NSM: No more FIT-based reverse auctions or bidding rounds like in phase 1. In the first bidding round of phase 2 Viability Gap Funding (VGF) was introduced. The awarded grant was 1.7 million -13.5 million INR/MW in the "open" category and 13.5 million - 24.6 million INR /MW in the "Domestic Content" (DC) category (PV modules and cells with Indian production are mandatory). ▪ Renewable Purchase Obligation (RPO): Due to supply exceeding demand in the months from June to September 2013, the prices of solar certificates (solar REC's) went down to the minimum value of 9,300 INR/MWh (~120 €). Until June 2014, the price in trade has also only had the minimum value of 9,300 INR/MWh.				
Recent changes in PV regulation	▪ A revision of the NSM is in the pipeline, aiming to encounter the following obstacles in the market: very high cost of capital, site acquisition, lack of electricity infrastructure, the addition of capacity not proceeding as planned within the framework of Phase II of NSM (2013 to 2017 approx. 9 GW) ▪ Furthermore, the new Indian central government is planning on raising the expansion target of grid-connected solar capacities by 2017 and wants to push for 100 GW by 2022. ▪ Renewable energy electricity rates for power utilities of the different states, as well as bulk consumers (Renewable Purchase Obligation – RPO) generated a demand for PV projects. Nevertheless, there still are problems regarding the implementation of RPO projects in the Indian states.				

Sources: dena (2011/2012),,GTAI (2014),Greenpeace (2013), Reconnectenergy (2014)

NATIONAL PV SUPPORT SCHEMES (1/4)

Jawaharlal Nehru National Solar Mission (NSM): 3 Phases and installation targets of the National Solar Plan			
Market segment	**Phase 1 (2010-2013)**	**Phase 2 (2013-2017)**	**Phase 3 (2017-2022)**
Off-grid (PV only)	200 MW	800 MW	1,000 MW
On-grid	500 MW (PV) 500 MW (CSP) 100 MW (Roof and small scale systems)	Target: 10 GW of installed PV systems by 2017 (3 GW through the Renewable Purchase Obligation – RPO)	Target: 15 GW of installed PV systems by 2019

- Phase 1: Creation of an enabling framework for the use of solar technologies, rapid implementation of NSM, ensuring investment security and the participation of project developers in competitive biddings, incentives for the construction of production facilities in the country (see also local content requirements).
- Phase 2: Substantial increase in additional solar capacities (CSP and PV) to facilitate the technologies' competitiveness, improvement of investment security through long-term power purchase obligation for utilities, etc. (RPO) and reduced customs duties.
- Phase 3: The target capacity of 20 GW by 2022 for grid-connected solar power should be met through international participation and PV and CSP technology transfer.

Stages and targets of the NSM (November 2014) : MNRE

Sources: MNRE (2010), dena (2011/2012), Bridge to India (2012)

NATIONAL PV SUPPORT SCHEMES (2/4)

Jawaharlal Nehru National Solar Mission (NSM): Tendering procedure Phase 1 and latest status Phase 2 (2013)

Phase	Method	FIT (average bid price, etc.)	Minimum capacity	Local content rules
Phase 1	FIT / Reverse auctions	1. Bidding round: 11.2 INR / kWh 2. Bidding round: 9.8 INR / kWh 3. Bidding round: delayed in 2012 and then cancelled due to the start of Phase 2	Round 1: 5 MW Round 2: 20 MW	Round 1: crystalline modules Round 2: crystalline modules and cells; (thin-film modules are excluded)
Phase 2	FIT /"Viability Gap Funding" (VGF)	1. Bidding round: - 750 MW in total; ca. 375 MW manufactured locally - max. 100 MW per tenderer/ company Fixed FIT: 5,45 INR/kWh	Round 1: 10 MW (max. 50 MW with 10 MW each)	Round 1: crystalline modules and cells as well as thin-film modules for 375 out of 750 MW

- Awarding of PV support in Phase 2: The granted PV tariff for bidders has been set at 5.45 INR / kWh. The PV tariff is fixed for a period of 25 years. (No more FIT-based reverse auctions or bidding rounds like in Phase 1).
- The PV tariff will be reduced by 10 % to 4.95 INR / kWh for a PV project using the accelerated depreciation over 25 years.
- The bidder has to prove that he is fulfilling various requirements needed to receive support: The equity capital of the project developer has to be 15 m INR/MW (~ 208 EUR/kW) as part of the investment costs.
- The government offers 25 m INR / MW for PV projects. Those developers bidding need to make an offer including the funds needed. The bidder who needs the least support will be funded with the needed sum.
- Local content regulation: 375 MW of the 750 MW total support will be awarded only if the modules and cells are produced in India - which also applies for thin-film modules. (Tenderers, who apply for both support categories, can only be supported by the Indian government up to 100 MW.)
- Between 4th October and 29th November 2013, bids for the first auction in Phase 2 of the NSM could be handed in. In February 2014, the winners of the two bidding categories were published. Results of the first auction in Phase 2 can be found here.

Sources:dena (2011/2012) Bridge to India (2012), PV-Tech (2014)

NATIONAL PV SUPPORT SCHEMES (3/4)

Support	Information
Quota system / solar REC certificates	**Renewable Purchase Obligation (RPO)/ Renewable Energy Certificates (RECs)** ▪ Solar RECs have been introduced to facilitate the power purchase obligation (RPO) for state-owned utilities. The RPO targets will be set by the state electricity regulatory commission. RPO quotas for solar electricity for 2012/2013 in the different Indian states vary between 0.05 % and 1.00 %. ▪ A distinction is made between solar and non-solar RECs. Solar RECs can be generated through grid-connected PV and CSP power plants. Federal authorities issue one REC per MWh generated solar power. ▪ RECs can be traded at Indian energy exchanges like the "Indian Energy Exchange (IEX)" and "Power Exchange of India Ltd. (PXIL)". The trading takes place on the last Wednesday of each calendar month and within a defined price limit. The price limit has been set until 2017. ▪ Due to supply exceeding demand in the months from June to September 2013, the certificate prices went down to the minimum value of 9,300 INR/MWh (ca. 111 €). In September 37,028 certificates were offered, from which 5,880 were sold. By June 2014, the certificate price was still at its minimum value.
Tax incentives	**Taxation of income**: ▪ The Income Tax Act, 1961, (or the new Direct Tax Code (DTC)) stipulates that newly founded companies producing electricity are subject to a profit tax exemption for ten consecutive years within fifteen years. **Special tax depreciation:** ▪ Energy-saving machines and systems as well as machines and systems for renewable energies are allowed to be specially-depreciated by 80 % of their value. Power plants and systems may be linearly depreciated. Regressive depreciations of 25 % are stipulated for intangible assets. **Special economic zones**: ▪ Support conditions vary. Gradual income tax reliefs ("tax holidays") and reliefs from indirect taxes like customs duty and Central Service Tax (CST). The duration of the support is generally in between 10 to 15 years.

Sources: dena (2011/2012) Bridge to India (2012), Climate-Eval (2013)

NATIONAL PV SUPPORT SCHEMES (4/4)

Support	Information
Low-interest loans	▪ The Indian Renewable Energy Development Agency (IREDA) and some state-owned banks and financial institutions provide special interest loans for certain technologies and systems. ▪ The renewable energy sector has been identified as a priority industry by the Reserve Bank of India. Therefore, banks are required to provide a certain amount of capital for Indian project developers as well as for foreign investors and project developers; and grant loans on favourable terms.
Tariff incentives	▪ The federal and state regulatory authorities for the electricity industry have the power to determine the tariff for certain renewable energy technologies, and project-specific tariffs in its sole discretion. This collective bargaining allows to control the PV expansion in the individual states and the special promotion of projects according to geographical circumstances. ▪ Remuneration-based tariffs and power generation-based incentives (Generation-Based Inventive Scheme, GBI) for power generation with renewable energies: The GBI plan allows the state support of renewable energies through incentives that are determined for each project.
Other incentives	▪ Individual states grant public land for PV projects in return for a symbolic rent payment (see Market News). ▪ IREDA provides financial assistance to companies in the renewable energy sector, which invest in research and development projects. ▪ A formal approval by the Federal Authority for electricity industry does not have to be obtained for PV projects up to 1 bn INR (approximately 15 m €) anymore.

Sources: dena (2011/2012) Bridge to India (2012)

STATE PV SUPPORT SCHEMES (1/6)

State support instruments

Gujarat solar policy

Fixed feed-in tariff (without bidding procedure):

- The federal PV support scheme guidelines came into force in 2009 before the NSM.
- Application for the allocation of land areas and remuneration must be directed to the Gujarat Energy Development Agency (GEDA).
- By July 2014, within the scope of the Gurjarat solar policy project, a total capacity of more than 916 MW was commissioned.
- The choice of the accelerated depreciation (AD) allows a wide range of financing with regards to the tax incentives above.
- The 25 year PV tariff model in MW range aims at giving funds to projects particularly during the first twelve years of operation.
- An Indian local content bonus is not stipulated in Gujarat as a condition of the support.

PV support scheme over a period of 25 years (since 29 January 2012)

Project size	Accelerated depreciation (AD)	Years of operation 1 bis 12	Years of operation 13 bis 25	Average over 25 years
MW range	Yes	9.98 INR/kWh	7.00 INR/kWh	9.28 INR/kWh
	No	11.25 INR/kWh	7.50INR/kWh	10.37 INR/kWh
kW range	Yes	11.14 INR/kWh		
	No	12.44 INR/kWh		

Sources: dena (2011/2012) Bridge to India (2012), neue energie (2014)

STATE PV SUPPORT SCHEMES (2/6)

State support instruments		
Rajasthan solar policy 2011 and 2014	**Bidding procedure:** ▪ Grid-connected PV projects with a capacity of 5 to 10 MWp are eligible for support. ▪ The total possible installed capacity in the first stage is limited to 200 MWp (only PV) by 2013 and to 400 MW (only PV) by 2017 in the second stage. ▪ The long-term expansion goal is 10 GW (only PV) of capacity by 2022. ▪ The long-term expansion goal in 2013 is a total of 50 MW from small-scale systems and 1 MW from rooftop systems. ▪ In the first round of tendering, in November 2012, 100 MWp were tendered but only seven PV projects could be realised. These have a total capacity of 75 MWp for the minimum tariff of 6.45 INR/kWh (7.73 €ct/kWh). **Other support:** ▪ The government offers industrial land at a reduced price (up to 25 % of the market price) to rent for 25 years for solar projects. ▪ Applications for the allocation of land areas and remuneration should be addressed to the Rajasthan Renewable Energy Corporation Limited (RRECL). **Rajasthan Solar Policy 2014:** ▪ The state-government of Rajasthan has recently revised the solar policy and became effective on 8th October 2014. The policy and its revision aim at developing 25 GW of solar energy in the next five years to attain self sufficiency. Property owners can lease their land to solar power producers for 30 years. In addition, power plants up to 10 MW get approved through a simple procedure. The 2014 policy promotes the construction of all types of solar power generation – for example PV projects within the NSM, Renewable Purchase Obligation (RPO), for own consumption as well as decentralized systems or rooftop systems that are connected to distribution grids. Further exists a clause for the allocation of land for PV project plans, which was hitherto prevalent only in Rajasthan.	

Details on Rajasthan Solar Policy 2014

Sources: dena (2011/2012) Bridge to India (2012), Down to Earth (2014)

STATE PV SUPPORT SCHEMES (3/6)

State support instruments	
Karnataka solar policy 2011 and 2014	**Bidding procedure:** ▪ The support program stipulates the establishment of solar power plants with a total capacity of 350 MW by 2016. ▪ PV projects with a capacity of 3 to 10 MW are eligible for support. ▪ Applications for the allocation of land areas and remuneration should be addressed to the Karnataka Renewable Energy Development Agency Ltd. (KREDL). ▪ The support is awarded to project developers who can bid the lowest price under the proposed purchase price from the regulatory authority (Karnataka Electricity Regulation Commission (KERC)) of 14.5 INR / kWh (about 0.212 € at an exchange rate of 1 € = 68.18 INR on 10.10.2012). ▪ During the last round of bidding the lowest bid was 7.94 INR / kWh. ▪ Information about the next round of bidding is not yet available. ▪ Standard application forms are available at the Karnataka Energy Agency; In 2011 projects with a total capacity of 60 MW (PV only) were tendered. ▪ Out of the 60 MW from step 1 only 18 MW have been commissioned because of delays in the administration. The deadline for connecting the systems has been moved to third quarter 2014. ▪ The evaluation of the second round of auctioning has been stopped for now by the KERC for procedural reasons. **Karnataka Solar Policy 2014-2021** ▪ The Karnataka Solar Policy has been revised in June 2014 and now aims at the construction of solar plants with a capacity of 2 GW by 2022.Thereof, around 400 MW shall be realized as grid-connected rooftop systems. At the beginning of 2014, within the RPO, the industry and electric utilities in Karnataka were obliged to obtain 1.5 % of their electricity from solar energy. This share is to rise to 3 % by 2022.

Details zur Karnataka Solar Policy 2014-2021 : IREEED

Sources: dena (2011/2012) Bridge to India (2012, '14), Cleantechnica (2014)

STATE PV SUPPORT SCHEMES (4/6)

State support instruments		
Andhra Pradesh Solar Policy 2013	**Bidding procedure:** ▪ Grid-connected PV projects with a capacity of 1 GWp are eligible for support. ▪ In a first bidding round the granted PV tariff was 6.49 INR / kWh for 25 years. ▪ Status of procedure: 331 bids over 1,780 MW of PV capacities have been submitted through the electricity utility AP Transco by the beginning of May 2013. Only 13 bidders with 56 MW of capacity could submit prices under 7 INR / kWh, while 107 bids over a total of 593 MW submitted prices between 8 and 8.5 INR / kWh. 350MW out of 600MW have been approved (as of July 2014).	
Tamil Nadu Solar Policy 2013	**Bidding procedure:** ▪ Grid-connected PV projects are eligible for support. ▪ The total capacity supported is limited to 1 GW (PV only) in the first round. ▪ The PV tariff lies at 6.49 INR / kWh, however, it will increase by 5 % annually for the first 10 years of operation. As new installations did not meet the expectations in the past two years, the remuneration rate has thus been changed to 7,01INR / kWh for PV. ▪ Duration: 25 years	
Kerala Solar Policy 2013	▪ Kerala announced its solar policy in November 2013. According to this, a target has been set to install a PV capacity of 500 MW by 2017 and 2,500 MW by 2030. ▪ Since June 2014, it has been possible to install rooftop-systems between 1 kWp and 1 MWp. As set in the Grid Interactive Distributed Solar Energy Systems Regulations 2014, operators of PV installations require a connection to a distribution grid of 11 kV as an electricity customer.	

Details regarding the regulation for the operation of rooftop systems in the state Keralala are available here.

Sources: PV Magazine (/2013b), Natural Group(2013), PV-Magazine (2013d) Tnerc (2014)

STATE PV SUPPORT SCHEMES (5/6)

State support instruments		
Uttar Pradesh Solar Policy 2013/2014	**Bidding procedure:** ▪ With its "Uttar Pradesh Solar Policy 2013", the Indian state wants to install 500 MWp of new PV capacities by 31st May 2017. ▪ The first public tendering process (Power Purchasing Agreement, PPA) of 200 MW PV capacity was launched on 15th March 2013. ▪ In December 2013, the Uttar Pradesh Power Corporation Limited (UPPCL) signed PPAs with six developers (with a duration of 10 years) to build 110 MW of PV capacity. The granted purchasing tariffs are among the highest in India (8.01 to 9.33 INR/kWh). All PV projects will be set up in the region of Bundelkhand, which has the highest solar radiation in the state (close to the border to the adjacent state Rajasthan). On top of this, the cost of land is cheaper in this area than in Punjab. A second public tender process with more than 300 MW of PV capacity ended on 9th September 2014. **Net metering /net billing:** ▪ The state Uttar Pradesh aims to promote new PV rooftop systems with a total capacity of 20 MW on public and private buildings until March 31st 2017 with the Uttar Pradesh Rooftop Solar Photovoltaic Power Plant Policy 2014. ▪ For rooftop installations ≤ 50 kWp net metering applies ▪ For rooftop installations > 50 kWp net metering does not apply	

Details about the Uttar Pradesh Rooftop Solar Photovoltaic Power Plant Policy 2014 : UPNEDA

Sources: Bridge to India (2013), Resolve (2013a), Natural Group (2014), UPNEDA (2014)

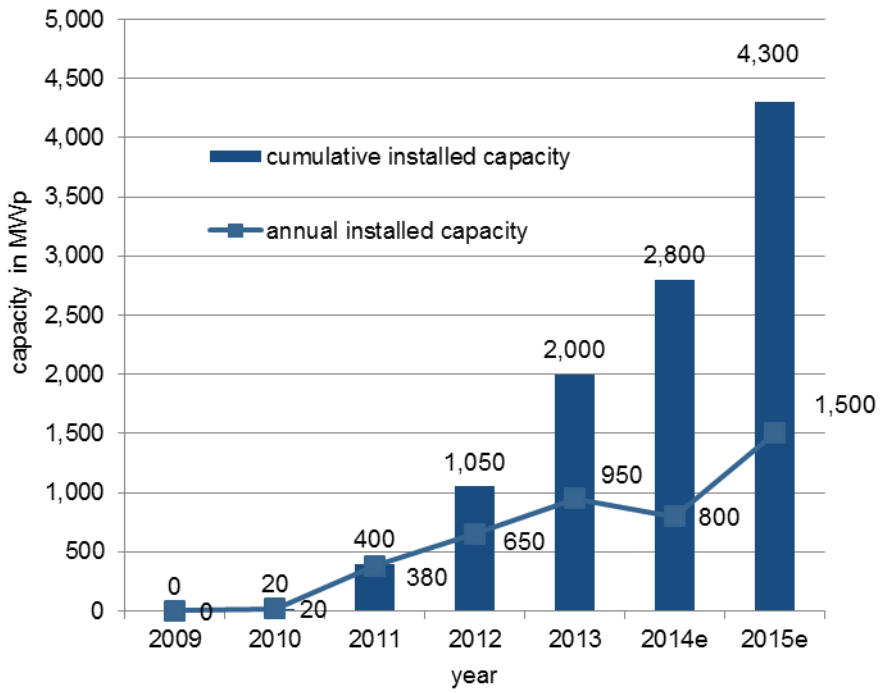
STATE PV SUPPORT SCHEMES (6/6)

State support instruments	
Punjab Solar Policy 2013	**Bidding procedure:** ▪ The state in the North wants to install 1 GW of new PV capacity as part of its energy policy program from December 2012 – the "New and Renewable Sources of Energy Policy 2012" – by 2022. At first,300 MW of PV capacity have been tendered. The PV projects can be built primarily on agricultural land, since a large part of the state is based on agriculture. ▪ Investors receive additional benefits: System components are exempt from VAT. ▪ The tender took place in two bidder categories: 50 MW have been allocated first to 19 investors and businesses, who wanted to build smaller PV power plants of a system size between 1 and 4 MW. Further 250 MW have been awarded to 8 out of 26 bidders, who will implement PV power plants with a capacity higher than 5 MW within 13 months. ▪ The fixed support for the advertised PV capacity should lie between circa 7.87 INR and 8.75 INR per kWh (ca. 0.12 - 0.13 €/kWh). For large-scale plants the lowest bids were between 7.67 – 7.97 INR per kWh for large-scale plants and 7.21 – 8.71 INR per kWh for small-scale plants. Potential bidders were required to have bank guarantee of at least 4 m INR per MW (ca. 615,000 €/MW). **Latest developments in 2014:** • According to recent statements, the state Punjab faces a deficit of power generation capacity of approx. 6 GW and plans to increase the PV target to 2 GW.

Sources: Bridge to India (2013), Resolve (2013b)

MARKET DEVELOPMENT AND BARRIERS

Development of installed PV capacity up to end of 2015 (on-grid)



Main barriers in the Indian PV market

Site selection and project implementation

- Site-specific irradiation data is not available nation-wide.
- The electricity purchase obligation is not consistently implemented.
- Payment risk for operators of RE systems due to the partly poor financial situation of the state utilities (Discoms).

FIT granting and financing

- So far, aggressive bidding process with high price pressure
- High domestic interest rates in a growing economy lead to high capital costs for projects.
- Many project proposals under the NSM could not meet defined building deadlines due to financing difficulties and supply bottleneck of equipment. This resulted in penalties.
- Local content regulation: 375 MW of the 750 MW total, which are tendered until 29th November 2013 will be awarded only if the modules and cells are produced in India.
- The share of projects with proven Indian equipment will continue to rise.

Installed grid-connected PV power ordered by federal states and PV promotion (30.09.2014): MNRE

Sources: dena (2011/2012) Bridge to India (2012,'14, 14a)

MARKET NEWS

Date	Topic	Source
28/10/2014	SunEdison signs MoU with Rajasthan for 5,000 MW solar plants US-headquartered solar power major, SunEdison, on Tuesday signed a Memorandum of Understanding with the government of Rajasthan in which the company has said it would put up 5,000 MW of solar power plants in the state.	The Hindu Business Line
30/09/2014	India-U.S. Energy Talks to Focus on Renewables Investment The U.S.-India Energy Partnership, which takes place 30th September and 1st October during the visit of Indian Prime Minister Narendra Modi, will focus on investments in renewable energy, energy efficiency and "the road ahead for U.S.-India cooperation" on climate change.	Bloomberg
29/09/2014	India may ask US to transfer technology and provide finance for 100 GW of solar Following the U.N. climate week, India's Prime Minister, Narendra Modi, is meeting US President Barack Obama. One of the items on the agenda is to form a 'working group' that would plan the roll out of 100 GW of solar in India over the next ten years. Two key items on the agenda of this working group are likely to be: i) engagement with US institutions and companies to set up manufacturing capacities in India that will help meet India's future demand domestically; and ii) financing India's ambitious solar plans.	Bridge to india
25/09/2014	India plans PV installations of 15 GW by 2019 (in German) India differs from his previous plan from trying to install until 2017 3.6 GW of new PV capacity, and raised the target mid-September to 15 gigawatts by 2019. The new target for 2019 is nearly a five-fold increase of the currently installed capacity equal.	Exportinitiative
10/09/2014	India's PTC and Power Finance to Jointly Fund Renewable Plants India's biggest power trader and one of the nation's largest lenders to electric utilities have agreed to jointly finance clean-energy projects. A lack of affordable debt is one of the biggest constraints cited by developers in India, which has raised borrowing costs three times in the past year to combat inflation.	Bloomberg

MARKET NEWS

Date	Topic	Source
09/09/2014	India's MNRE proposes development of "ultra mega" solar PV power projects totaling 20 GW On August 8th, 2014 India's Ministry of New and Renewable Energy (MNRE) announced a new scheme for the development of solar parks and "ultra mega" solar photovoltaic (PV) projects totaling 20 GW. Through this scheme MNRE plans setting up 25 solar parks, each with a capacity of 500 to 1.000 MW; thereby targeting around 20.000 MW of installed solar power generation capacity. MNRE supports deployment through grants.	SolarServer
21/08/2014	Andhra Pradesh aiming for 5 GW of solar by 2019 The state government is expected to unveil plans in the coming weeks that would facilitate the installation of approximately 5 GW solar power and 4 GW of wind generation capacity by 2019. Last year the state government launched a series of tenders to set up 1.16 GW of solar power capacity across the state. Despite a strong response, the division of the state earlier this year, which resulted in the formation of the new state of Telangana, appears to have those projects in limbo.	PV-Magazine
31/07/2014	India Solar Manufacturing Base Could Save $42 Billion India could save itself $42 billion in solar equipment imports by helping turn its ailing manufacturers into a viable industry, according to KPMG. The findings come as India ponders whether to impose dumping duties on U.S. and Asian solar panel and cell suppliers in a bid to protect local competitors whose factories are operating at one-fifth of their capacity.	Bloomberg

MARKET NEWS

Date	Topic	Source
24/07/2014	Phase I target of 1.1 GW on-grid capacity exceeded (in German) From awarded 950 MW although only 420 MW were taken during the period in operation, but led projects under other central government programs totaling 161 MW , as well as federal incentives to a total installed capacity of around 1.4 GW (as of March 2013). For Phase II (2013 -2017) of NSM, an increase of on-grid PV capacity to 10 GW is target.	GTAI
01/10/2013	India has adopted new law for land acquisition The new Indian Land Acquisition Act is aimed at guaranteeing that land owners, in cases of state expropriation, will be compensated appropriately. Furthermore, the government is hoping that the herein included process will avoid putting large industry and infrastructure projects on halt for, sometimes, years. Landowners are mostly reacting positively but the private sector fears excessive costs and bureaucracy.	GTAI
24/04/2013	India: Guidelines for selection of 750 MW grid-connected PV projects The Ministry of New and Renewable Energy (MNRE) has released the draft guidelines for the second phase of batch 1 under the Jawaharlal Nehru National Solar Mission (JNNSM) to set up 750 MW of grid solar PV power projects.	PV-Magazine
04/04/2013	India: solar cheaper than grid power: Solar power is cheaper than grid power for commercial consumers in Maharashtra, Delhi and Kerala, even with no subsidies, according to a quarterly report published by consulting company Bridge to India.	PV-Magazine

CONTACT INFORMATION

Category	Name	Website
Ministry of Commerce and Industry	Ministry of Commerce and Industry(MoCI)	commerce.nic.in
Indo-German Chamber of Commerce	Deutsch-Indische Handelskammer (AHK)	indien.ahk.de
Ministry of Renewable Energy	Ministry of New and Renewable Energy (MNRE)	www.mnre.gov.in/
Database for the promotion of renewable energy	Indian Renewable Energy and Energy Efficiency Database (IREEED)	www.ireeed.gov.in/
Federal Regulator for Electricity Industry and Electricity Market	Central Electricity Regulatory Commission (CERC)	www.cercind.gov.in
National Renewable Energy Development Agency	Indian Renewable Energy Development Agency Limited (IREDA)	www.ireda.gov.in
Federal Solar Policy Federal Development Corporation	Jawaharlal Nehru National Solar Mission (NSM) Solar Energy Corporation of India (SECI)	www.mnre.gov.in/solarmission/jnnsm/introduction-2/ http://seci.gov.in/content/
National Network Operator	NTPC Vidyut Vyapar Nigam Ltd (NVVN)	www.nvvn.co.in/
Local Renewable Energy Development Agency	Odisha Renewable Energy Development Agency (OREDA)	www.oredaodisha.com/
Local Energy Development Agencies	Gujarat Energy Development Agency (GEDA) Maharashtra Energy Development Agency (MEDA)	http://geda.gujarat.gov.in/index.php www.mahaurja.com/
Local Renewable Energy Development Corporation	Rajasthan Renewable Energy Corporation Limited (RRECL)	www.rrecl.com/Index.aspx

Sources: dena (2010), dena (2011/2012)

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