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1 Introduction

Markus Steigenberger, Deputy Executive Director of German think tank **AGORA Energiewende** foresees a global PV boom. "Today investment in Renewable Energies worldwide is already higher than in fossil power plants", says the Berlin based energy expert. Due to his point of view a lot of transitional countries are at the same point as Germany before it started its energy shift – so called Energiewende. That means coal is still energy source number 1, but at the same time the countries are increasing investments in renewables significantly. "When it comes to questions like grid integration, we see the same debates as in Germany before", Steigenberger says, who is responsible for the European and international relations of AGORA think tank. As Germany has already increased its share of renewables in the power mix for more than 30 percent in average, Steigenberger and his team are registering more and more interest from countries like China, Brazil, Indonesia, Thailand and India. "But we also see a lot of confusion in public debate." AGORA Energiewende wants to help transitional countries to pave their way into strong and sustainable renewable energy markets. Therefore Steigenberger is building up a special department. "We are offering facts and figures for a structured debate and examples of best practices from all over the world." Steigenberger knows that the challenges for each country are different, but is convinced that he and his team can offer good solutions. In India AGORA Energiewende is cooperating with **Shakti Foundation**. Markus Steigenberger holds a Master of Business Administration and an M.A. in Economics, History, Political Science and Law.

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Events and Activities

India is the most interesting place in 2015

18-19 November 2015

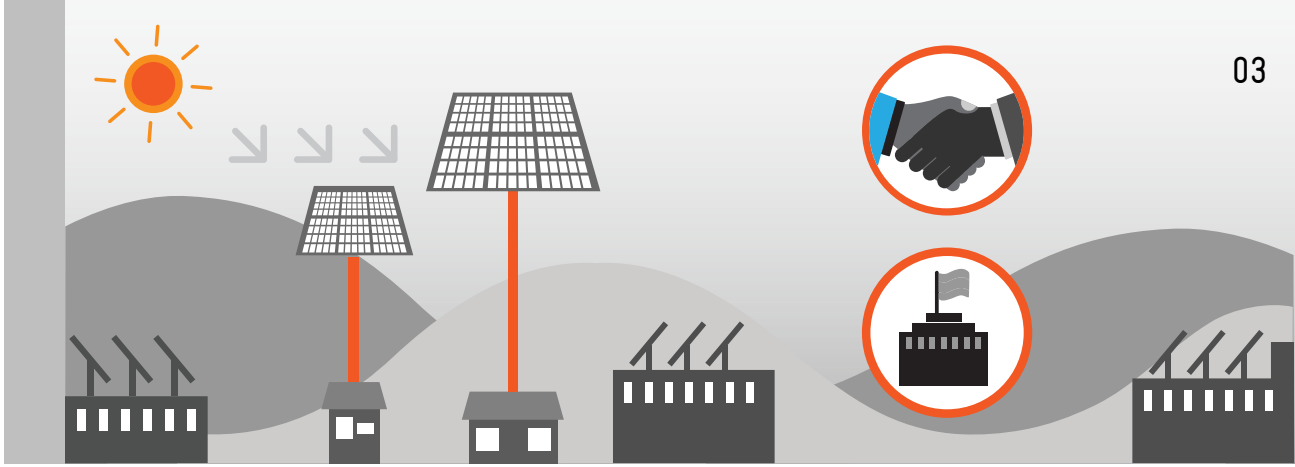
4th Indo-German Energy Symposium at Intersolar Mumbai

"India is the most interesting place in 2015", says Prof. Dr. Eicke Weber, Director of Fraunhofer Institute for Solar Energy Systems ISE, Germany in his inauguration speech at 18th November in Mumbai. Prof. Weber is one of the world's leading scientists in solar technology and together with Susanne Dorasil, Head of Economic Cooperation at the German Embassy in New Delhi and Mrs. Claudia Arce, Director of South Asia of KFW, the German Development Bank, he is inaugurating the 4th Indo German Energy Symposium, back to back with the fair Intersolar India 2015. But why India? "It is the right time! And everything comes together, especially the political will!"

Moreover Prof. Weber foresees a global boom for the next 10 to 15 years for worldwide solar PV-installation. "Exciting times will come, especially for investors", predicts the professor. No doubt, India will benefit from this development and Germany's role as a longstanding partner is guaranteed. Only last year Germany committed 1 billion Euro for Green Energy Corridors in India plus a new package on the same amount for the just established Indo-German Solar Partnership, as Mrs. Dorasil is mentioning. "Today Renewable Energy is a strong pillar of our Financial Cooperation and counts 50 percent of our commitments", is Mrs. Claudia Arce from the German Development Bank underlining the statement.

From left to right: Mr. Subranshu Patnaik, Senior Director, Deloitte India, Mr. Tarun Kapoor, Joint Secretary, MNRE, Ms. Claudia Arce, Director-South Asia, KFW, Mr. B V Rao, IREDA and Prof. Dr. Eicke R. Weber, Director, Fraunhofer Institute for Solar Energy Systems ISE



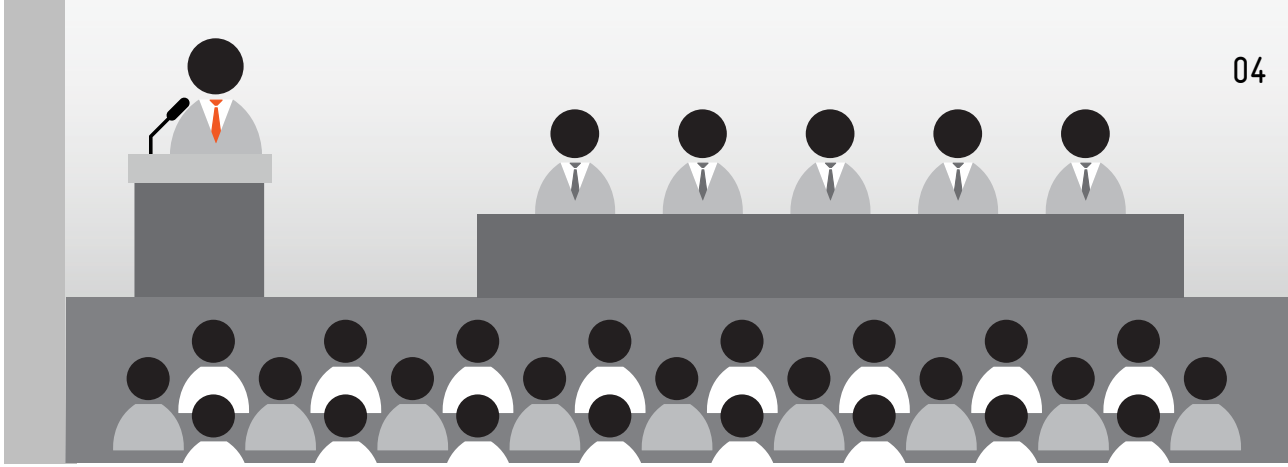


“Scaling up Renewable Energy and Facilitating Finance” was the title of the 4th Indo-German Energy Symposium. How to do this, explored the experts, participants and panellists in four different sessions on 18 and 19 November.

- The session “Solar PV Rooftop – Market Development in India and International Trends” focused on upcoming business models and business opportunities in rooftop, possibilities of financing and support schemes as well as international trends in self-consumption.
- The session “Planning for 175 GW Grid Connected Renewable Energy by 2020” gave an overview on ongoing bilateral cooperation projects, challenges of large scale grid integration of existent and upcoming renewable power plants.
- During the session “Making RE and EE Business a Win-Win for Private and Public” business opportunities in renewable energies and energy efficiency in India were presented.
- The last session presented “Bankable Business Models to Finance Solar Projects in India”.



Ms. Susane Dorasil, Head of Economic Cooperation and Development, German Embassy at her session on Bankable Business Models to Finance Solar Projects in India



The 4th Indo-German Energy Symposium brought together representatives from industry, central and local governments, financial and research institutions from India and Germany to join the expert discussions over two days. This year, Intersolar hosted the Indo-German Energy Symposium, a high level platform for expert's exchange from India and Germany on the most important questions of solar pv market development, large scale grid integration of renewable energies, finance and investment opportunities for renewable energies and energy efficiency in India. More than 10.000 professional visitors could be counted at Intersolar Mumbai this year and hundreds of them attended the Symposium.

The biennial Symposium takes place on behalf of the Ministry of New and Renewable Energy (MNRE), Government of India and the Federal Ministry of Economic Cooperation and Development (BMZ), Federal Government of Germany.

All presentations can be downloaded from the website of Indo-German Energy Forum:
www.energyforum.in



Dr. Winfried Damm, Director, IGEN moderating the session on making RE and EE business a win-win for private and public



Keen audience of the symposium

Energy Storage is the game changing technology

8-9 December 2015

Indo-German Energy Forum-Support Office

Energy Storage is the game changing technology that will help India leapfrog its energy infrastructure within the next decade. At least the organisers of Energy Storage India (ESI) the annual conference and expo addressing the need for energy storage and micro-grid solutions in India are convinced of this. "Storage is a huge missing link in the entire energy story", says Dr. Satish Agnihotri, Former Secretary, Cabinet Secretariat, Government of India. Mr. Rajan Katoch, Secretary, Ministry of Heavy Industries & Public Industries, foresees, "...a huge explosion in demand and with that we need storage, otherwise it doesn't work!" No doubt, as the renewable energy capacities will start ramping up in India, storage will be the key technology to manage grid fluctuations. During the event, Speakers & Delegates mulled over on

a number of key issues for the Indian market like realizing a modern and resilient grid by incorporating proven and innovative energy storage solutions; creating an open market leading to decrease in costs for energy storage technologies; needs for switching from diesel generators to energy storage systems etc. Expo and conference were attended by the business and industry focus groups which included utilities, developers, energy storage OEMs, solution providers, regulatory & policy makers, industry stakeholders & commercial/industrial end users. 720 delegates from more than 16 countries and over 80 speakers shared their knowledge at ESI 2015, held on 8-9 December at Indian Habitat Centre, New Delhi.



Ms. Varsha Joshi, Joint Secretary, MNRE and Mr Stephen Fernands, President, Customised Energy Solutions during the event



ESI 2015 delegates

"Triple Win" is necessary to make India's ambitious targets reality

18 February 2016

KFW and TERI launching study on "Grid Parity of Solar Rooftop Systems"

The Indian Solar PV market is poised for significant growth within the next five years. This is one of conclusions of the study "Grid Parity of Solar PV Rooftop Systems for Commercial and Industrial Sector". TERI and KFW, the German Development Bank, presented the study while the "India Germany Roundtable on Solar Rooftops" on 18 February at India Habitat Centre". How to ensure high quality, long-lasting, reliable and prudent practices of workmanship in the Indian solar power sector was one of the most important topics while the one-day workshop. These aspects are critical to de-risking investments and enhancing bankability and safety aspects of rooftop solar projects. Mrs. Susanne Dorasil of the German Embassy in New Delhi commented that quality control, certification and standards for grid-connected rooftop solar PV systems are essential for the successful mass-scale implementation of solar rooftops because these issues are also going to be key for

attracting low cost and sustained financing for the sector. The newly taken charge Director General of TERI, Dr. Ajay Mathur stressed that as we go ahead with rooftops, innovations in the technical configurations and business model are extremely important to bring a simplified package to a consumers doorstep so that he or she does not have to worry about maintenance and performance risk. KfW's Regional Director for South Asia, Ms. Claudia Arce said that a "Triple Win" is necessary to make India's ambitious targets a reality (1) strong and consistent policy/regulation at the Government's end, (2) building the confidence and satisfaction of consumers so that a word of mouth network can be built and (3) the role of banks and DISCOMS to make rooftop solar bankable. The workshop brought together more than 65 participants from banks and the financial sector, including developers, distribution utilities and government bodies.

All presentations can be downloaded from www.energyforum.in



Ms. Claudia Arce, Director-South Asia, KFW, Ms. Susane Dorasil, Head of Economic Cooperation and Development, German Embassy in New Delhi, Dr. Ajay Mathur, Director General, TERI releasing the study on "Grid Parity of Solar Rooftop Systems"



Mr. K S Popli, CMD, IREDA addressing the audience

3

Developments in Indo-German Energy Cooperation

Strengthening of Indo-German cooperation: Two implementation agreements concluded

Germany supports India's endeavor to reach its ambitious clean and renewable energy goals. On 19 February, both countries concluded two implementation agreements for bilateral projects.

The objectives of the project "Integration of Renewable Energies in Indian Electricity System" (I-RE) are:

- Support the Ministry of New and Renewable Energy (MNRE) in developing a long-term renewable energy based electricity sector "vision" for India.
- Support integration of renewable energies and, specifically, rooftop photovoltaic plants into the distribution grid at low and medium voltage levels.

The Indo-German Energy Program – Access to Energy in Rural Areas (IGEN-Access) seeks to

create a conducive environment for renewable rural energy enterprises to make energy services and products easily accessible for everyone. The promotion of renewable energies – as shown inter alia in Germany – is a motor for economic development. This includes the generation of jobs and income, both in the industrial and craft sectors. Within the solar segment, there is a high potential for decentralized photovoltaic (PV) systems, especially for roof-top systems. Keeping in mind the continuing megatrend of urbanization in India, PV roof-top-systems offer a unique opportunity to contribute to a climate neutral energy supply integrated into urban space.

The German contribution for the two projects will be implemented by GIZ with a budget 5 million Euros (Rs 35 Crore).

For more details click [here](#).



Dr. Wolfgang Hannig, Country Director, GIZ India and Mr. Tarun Kapoor, Joint Secretary, MNRE and Mr. V K Jain, Director, MNRE during the signing of Implementation Agreement



German and Indian representatives during the signing of Implementation Agreement.

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Policy updates

New Tariff policy will ensure 24x7 affordable Power for All by 2022

“New tariff policy can be a significant reform for the power and renewable sector” states BRIDGE TO INDIA in its Market Outlook on the Indian energy market. On 25 January India’s Cabinet Committee on Economic Affairs (CCEA) approved amendments to the National Tariff Policy 2005. Main objectives of the amendments are: ensuring availability of power 24x7 for everyone in the country everywhere latest by 2022, ensuring financial viability for the sector, promoting transparency and competition. Another major highlight is the strong impetus on renewable sources. Under the amendments, Renewable Purchase Obligations (RPO) targets have been enhanced with direct impact for the customer.

This will happen through regular revisions in tariffs. Also inter-state transmission charges for solar and wind power have been waived off. The amendments to the tariff policy were mostly welcomed by the public and media but “implementation will be the challenge” was the most given comment on it.

Sources:

<http://www.bridgetoindia.com/blog/new-tariff-policy-can-be-a-significant-reform-for-the-power-and-renewable-sector/#more-3957>

<http://pib.nic.in/newsite/pmreleases.aspx?mincode=52>



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News

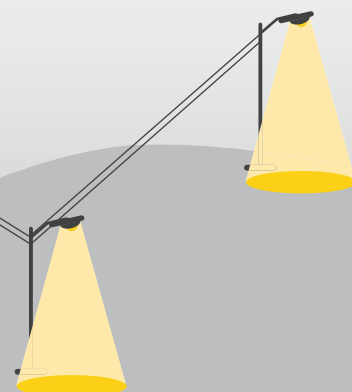
Blue & Green Tomorrow

Biogas Associations announce Project Development Partnership

The German Biogas Association (Fachverband Biogas e.V.) and the Indian Biogas Association (IBA) have announced a three-year project to foster development of the biogas industry in India. The objective of the partnership is to improve the framework for the development of the biogas industry in India and build a member-based association structure so the IBA can be independently financed. IBA will work to communicate the interests of its members during the construction and operation of biogas plants, and work closely with the Indian Government, relevant stakeholders and the general public. "The potential for biogas energy production in the Indian subcontinent is enormous", says Dr.

Claudius da Costa Gomez, CEO of Fachverband Biogas e.V. According to research by the Indian Ministry of Renewable Energies, India can generate 5,000 megawatts (MW) from biogas solely through the consistent use of biogenic residual materials accumulated in the country's sugar mills. Additionally, up to 650 million tons of biomass materials available can provide an additional 18,000 MW of electric power. If realized, India could supply 20 percent of its annual electricity needs with nearly 700 TWh from biogas plants.

www.biogas-india.com



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Publications



BP Energy Outlook: demand for energy will continue

Demand for energy will continue to grow over the next 20 years and beyond as the world economy expands and more energy is required to power the higher level of activity.

According to the 2016 edition of the BP Energy Outlook, published in February, global demand for energy is expected to increase by 34% between 2014 and 2035, or by an average of 1.4% per year. This growth in overall demand includes significant changes in the energy mix, with lower-carbon fuels growing faster than carbon-intensive fuels. Despite the rapid growth of other sources, the Outlook projects that fossil fuels will remain the dominant form of energy over the period to 2035, meeting 60% of the projected increase in demand and accounting for almost 80% of the world's total energy supplies in 2035.

Gas will be the fastest growing fossil fuel, increasing 1.8% a year and oil will grow steadily at 0.9% a year. Non-fossil fuels are projected to grow even faster than anticipated in last year's Outlook.

Income and population are the key drivers behind the growing demand for energy. By 2035 the world's population is expected to reach nearly 8.8 billion. Over that same period, GDP is expected to more than double. Strong growth in emerging economies will drive the demand for oil, with China and India accounting for over half of the increase in world demand, as the number of vehicles on the planet more than doubles.

More than half of the increase in global energy is used for power generation, with much of that increase taking place in regions where a large part of the population have limited access to electricity. Power generation is a sector where all fuels compete and it will play a major role in the evolution of the fuel mix as renewables and gas replace coal-fired power stations. Renewables account for over a third of the expected growth in power generation.

Click [here](#) to download the publication.



Offshore Wind Energy – An Overview of Activities in Germany

“By the end of this year, more than 3,000 megawatts of offshore capacity will have been installed in the German North Sea and Baltic Sea. This marks the arrival of the industrialization phase for offshore wind energy in Germany, which holds the potential to reduce energy costs further in the future”, writes Sigmar Gabriel, German Vice Chancellor of Germany and Federal Minister for Economic Affairs and Energy in the introduction of the brochure “Offshore Wind Energy - An Overview of Activities in Germany”.

The brochure, just been published in English, can be downloaded from the BMWi [website](#).

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Upcoming Events

GIZ- ComSolar project

Date: 11 March, 2016

Venue: Scope Complex, New Delhi

Indo-German Energy Programme- Comsolar project is organising a workshop on "Scientific basis of satisfactory performance of low and mid temperature Solar Heat for Industrial Processes (SHIP) systems" to present the final results of the Solar Water Heating in Industrial Processes (SoPro India) project on 11 March 2016 at Scope Complex, New Delhi.

For more information please contact
Abhinav Goyal

Berlin Energy Transition Dialogue 2016

Date: 17-18 March, 2016

Venue: Federal Foreign Office, Berlin

The German Government will host the international Energy Transition Dialogue at the Federal Foreign Office, Berlin from 17 to 18 March. The event is aimed at government and business decision-makers, scientists, interest groups and civil society. Following the successful conclusion of COP21 in Paris, the task now is to discuss concepts for an intelligent, sustainable and cost-efficient energy transition

For further information please visit:
<https://www.energiewende2016.com/>

India Smart Grid Week (ISGW 2016)

Date: 15-19 March, 2016

Venue: Manekshaw Centre, Dhaula Kuan, New Delhi, India.

India Smart Grid Week (ISGW 2016) is the second edition of the Conference cum Exhibition on Smart Grids and Smart Cities, organised by India Smart Grid Forum from 15-19 March 2016 at Manekshaw Centre, Dhaula Kuan, New Delhi, India.

ISGF is a public private partnership initiative of the Ministry of Power, Govt. of India with the mandate of accelerating smart grid deployments across the country. With 200+ members comprising of ministries, utilities, technology providers, academia and research, ISGF has evolved as a globally recognised Think-Tanks in Smart Grids and Smart Cities.

ISGW 2016 is planned as a Conference and Exhibition that will bring together India's leading Electricity Utilities, Policy Makers, Regulators, Investors and world's top-notch Smart Grid and Smart City Experts and Researchers to discuss trends, share best practices and showcase next generation technologies and products. More than 1000 delegates and 100+ Exhibitors are expected to participate in the Conference and Exhibition. ISGW 2016 provides a unique platform to network with senior government officials, utility chiefs and regulators and policy makers.

IGEF-SO is official supporting partner of India Smart Grid Week 2016

For further information please visit:
www.isgw.in or write to: isgw@isgw.in

Please click [here](#) for more events.

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Disclaimer

The views expressed in this newsletter are solely those of the Indo-German Energy Forum (IGEF) Support Office team. The IGEF Support Office cannot assume any responsibility for the contents of other websites linked in this newsletter.

The Support Office of the Indo-German Energy Forum provides liaison services for all stakeholders. It serves as a first point of contact both to the Indian and German governments as well as companies seeking to get involved in the process. The Support Office answers queries regarding proposals for the IGEF dialogue or IGEF projects and any other subject relevant to the private sector.

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