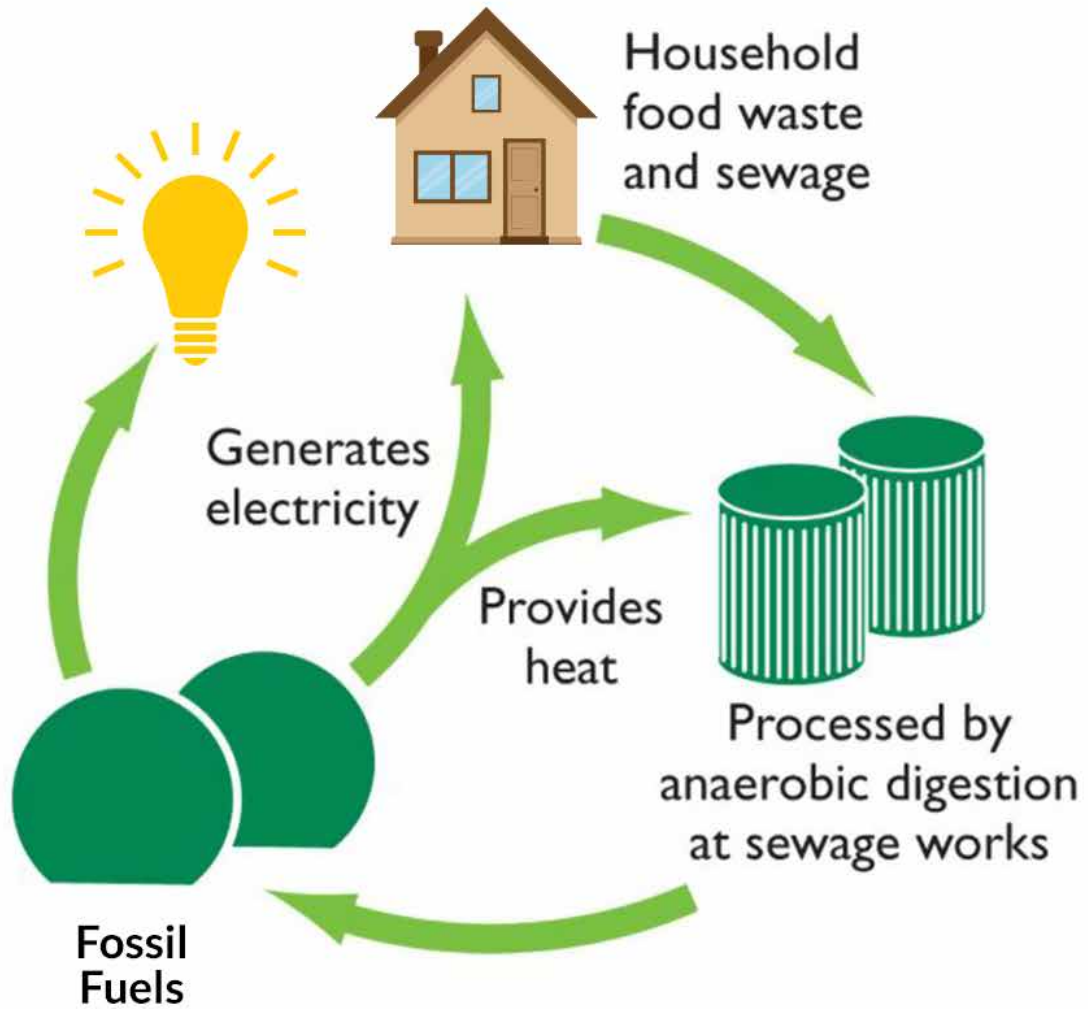


# Solid Waste Management Business Delegation to India



27 Sep - 1 Oct 2016





## Solid Waste Management - Growth market with potential

India is one of the most populated countries in the world. As one of the rapidly developing countries it is also the source of a humongous amount of waste per annum, be it the municipal solid waste, hazardous waste, biomedical waste or e-waste. Segregation at source, collection, transportation, treatment and scientific disposal of waste is largely insufficient leading to degradation of environment and poor quality of life.

## Present status of Solid Waste Management in India

APPROXIMATELY 50 MILLION METRIC TONNES (115,000 METRIC TONNES PER DAY) OF SOLID WASTE IS GENERATED EVERY YEAR BY THE URBAN POPULATION IN INDIA.

EXPERTS ESTIMATE THE INDIAN SWM MARKET TO BE WORTH US\$ 13.62 BILLION AND EXPECTED GROWTH AT A CAGR OF 7.14% BY 2025.

OPEN DUMPING A COMMON PRACTICE, NO SCIENTIFIC CLOSURE OF LANDFILLS – PUBLIC HEALTH MENACE, GHG EMISSIONS

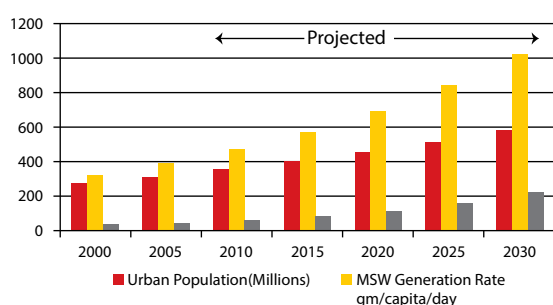
NEGLIGIBLE WORK ON WASTE MANAGEMENT INCLUDING WASTE MINIMIZATION, ITS REUSE & RECYCLING

## Waste Generation & Disposal Status in India

36 % (8 OUT OF 22) CITIES GENERATE MORE THAN 1000 TPD OF WASTE

13.6 % (3 OUT OF 22) CITIES GENERATE WASTE BETWEEN 500- 1000 TPD

50 % (11 OUT OF 22) CITIES GENERATE LESS THAN 500 TPD OF WASTE



Source: Central Pollution Control Board

## The Hon'ble Minister for Urban Development, Shri M Venkaiah Naidu launched the Municipal Solid Waste Management Manual during a nation-wide launch event of Swachh Survekshan, 2017

On the occasion of the nation-wide launch event of #SwachhSurvekshan 2017, the Hon'ble Minister for Urban Development, Shri Venkaiah Naidu launched the Municipal Solid Waste Management Manual on 6th August 2016 at the National Media Centre in Delhi.

To accomplish the vision of Swachh Bharat Urban expeditiously, particularly on solid waste management, MoUD, through the Municipal Solid Waste Management Manual aims at guiding all stakeholders particularly Urban Local Bodies (ULBs) to adopt suitable measures for waste minimisation at source, better systems for segregation, collection, transportation, processing, treatment and disposal in complete harmony with the environment and in line with prevalent MSW regulations prepared. The revised MSW Manual 2016 has been developed by MoUD in collaboration with GIZ.

To address the challenges of municipal solid waste management and to support the States and ULBs in developing modern and appropriate systems in line with the Swachh Bharat Mission under MoUD, the Ministry of Environment Forest and Climate Change (MoEFCC) has revised the Municipal Solid Waste Management Rules 2000 and has come out with the Solid Waste Management Rules 2016.

## Aim of the business delegation

The business delegation to IFAT India aims at providing small and medium sized companies a substantial overview of the MSWM market, investment opportunities and incentive programmes in India. We provide first points of contact to companies in the industry, in order to enable decision-making towards entering the Indian market and establishing first contacts in this sector.

### We look forward to

- Promoting member cooperation, exchange of information and experience
- Innovation and knowledge transfer in recycling-and efficiency technology

### Target Group

Target group of market exploration are small and medium sized German companies from the areas of SWM specialising in services and products for waste collection and transportation vehicles, conveyors / cranes / crushers / dozers / dumpers, compost technologies and plants, Incineration plants for solid and hazardous waste, waste to energy, separation equipment etc.

### Benefits

- Detailed information of the target market and access to expert knowledge and valuable market information
- Information workshop during IFAT India, with local experts, referents, and multipliers
- Visits to Solid Waste Management sites in Mumbai,
- Networking events for business contacts and with Government agencies

# TRAVEL PROGRAMME AND PLAN

## Tuesday, 27. September 2016 (Mumbai)

Arrival in Mumbai

## Wednesday, 28. September 2016

- » Tour of IFAT India
- » Personalised One2One meetings with Indian companies & other stakeholders

## Thursday, 29. September 2016

- » Conference organised together with ISWA, GIZ India and Messe München
- » Interactive Technology Exchange session with Municipal Corporations & Industry partners
- » Cocktail Networking Dinner hosted by Consul General of the Republic of Germany

## Friday, 30. September 2016

- » Site visit to Solid Waste Management Deponie and upcoming Waste2Energy plant in Mumbai.

### Aim of the site visit is to understand

- » The present status of SWM in Mumbai
- » Upcoming plans of the Mumbai Municipal Corporation to build one of the world's biggest Waste2Energy plant
- » Clearing up of the existing Land fills in Mumbai

### 13.00 to 17.00 Friday, 30 September,

- Site Location: Mulund Deponi, Kanjurmarg or Deonar
- Participation fees: 10 Euro per person, Pick up in front of IFAT India entrance
- Personalised One2One meetings with Municipal Corporation

## Saturday, 1. October 2016

Discover Mumbai - Fly back to Germany

## Waste & Resource Management in India: Status, Challenges, Solutions and Road Map for the Future

29<sup>th</sup> September 2016 | 12:00 – 18:30 | Innovation Exchange Forum, Bombay Exhibition Centre, Hall 5, Mumbai

### BACKGROUND and INTRODUCTION

With growing urban population and changing household consumption patterns, waste management is fast becoming one of the key problems of modern society due to the ever expanding volume and complexity of discarded domestic and industrial waste. Appropriate waste and resource management, under the right policy/business conditions, contributes to learning and development of capability, which in turn contributes to sound waste management practices. The sessions will address the status of solid waste policy promoting proper waste management in India. Further, the sessions will present potential solutions to the hurdles/challenges of waste management in India.

29 <sup>th</sup> September 2016, 12:00 – 13:00	
<b>Opening High Level Session – Keynote presentations</b>	
	<b>Welcome Remarks - Mr. Stefan Rummel</b>   Managing Director   Messe München
<b>Speakers</b>	<b>Sh. Praveen Prakash</b>   Joint Sec (SBM)   Ministry of Urban Development (tbc)
	<b>Smt. Manisha Patankar Mhaiskar</b>   Secretary   Urban Development Department   Government of Maharashtra
	<b>Mr. Ajay Shiriram</b>   Convenor of Special Task Force on Waste Management   CII (tbc)
	<b>Mr. M. Goutham Reddy</b>   Executive Director   Ramky Group
	<b>Dr. Vivek Agrawal</b>   Representative of ISWA's National Member in India (Institute of Chartered Waste Managers)

### FORMAT

The format of the sessions will be a “Davos style” panel, with each panelist answering guiding/targeted questions by the moderator, followed by discussion in the panel and with the audience.

Session 1: 13:00-14:00 – Solid Waste Collection and Transportation	
<b>OBJECTIVES</b>	
Studies estimate that solid waste generation in India is approximately 115,000 tons per day with a yearly increase of about 5%. With increasing volumes, it becomes imperative that waste is properly collected and disposed. This session will discuss various government initiatives focusing on waste management issues in India and whether these schemes are compatible with the waste management needs and priorities of the country. The panelists will look at the profound linkages between the private sector and spurring innovation in collection and transportation solutions. Discussion will spin around the priorities and opportunities at the local as well as the country level, focusing on the needs of the country, building on the important work being done by multiple actors, scaling it up and making it more effective.	
<b>GUIDING QUESTIONS</b>	
<ul style="list-style-type: none"> <li>• What are the key government initiatives focusing on Waste Management?</li> <li>• How can the private sector help achieve the targets of these initiatives?</li> <li>• How can effective storage, collection, transfer and transport of solid waste be achieved – the role of municipalities?</li> </ul>	
<b>13:00 – 13:10</b>	<b>Welcome Remarks</b>
<b>13:10 – 13:50</b>	<b>Panel Discussion</b>
<b>Panellists</b>	<b>Facilitator: Dr. Vivek Agrawal</b>   Chairman   Institute of Chartered Waste Managers
	<b>Ms. B. Sandhya</b>   Scientist D   Chemical Department   Bureau of Indian Standards
	<b>Mr. M. Goutham Reddy</b>   Executive Director   Ramky Group
	<b>(tbc) Dr. Vinod Rao</b>   Commissioner   Vadodara Municipal Corporation   India
<b>13:50 – 14:00</b>	<b>Question &amp; Answer</b>
	Participation from the audience



Session 2: 14:00-15:00 – Recycling and Waste Minimisation	
<b>OBJECTIVES</b>	
<p>This session will present and discuss viable approaches and options within the government schemes for facilitating recycling and waste minimisation solutions. It will bring together the stakeholders involved, for instance experienced practitioners and policymakers. Moreover, it will discuss and identify ways to address barriers to the deployment of sound WM recycling solutions. Accordingly, the discussion intends to provide examples demonstrating best-practices for sustainable WM. Panelists will have the opportunity to share their experiences with WM, practical results, as well as challenges and lessons learned.</p>	
<b>GUIDING QUESTIONS</b>	
<ul style="list-style-type: none"> <li>• What are the main avenues for intervention within each instrument/government scheme for waste minimisation and recycling?</li> <li>• How to effectively distribute responsibilities between stakeholders and what involvement is needed to achieve local and national recycling aspirations?</li> <li>• What are the financial instruments/incentives or recycling schemes available to promote recycling of waste?</li> </ul>	
<b>14:00 – 14:45</b>	<b>Panel Discussion</b>
<b>Panellists</b>	<b>Facilitator: Dr. Prasad Modak</b>   Executive President   Environmental Management Centre LLP
	<b>Ms. Vaishali Nandan</b>   GIZ India
	<b>Mr. Ulhas Parlikar</b>   Director   Geocycle India
	<b>Ms. Chitra Mukherjee</b>   Head of Programmes, Operations   Chintan
<b>14:45 – 15:00</b>	<b>Question &amp; Answer</b>
	Participation from the audience

Session 3: 15:00-16:00 – Waste to Energy / Incineration	
<b>OBJECTIVES</b>	
<p>Currently, of the estimated 62 million tonnes of MSW generated annually by 377 million people in urban areas, more than 80% is disposed of indiscriminately at dump yards in an unhygienic manner by the municipal authorities leading to problems of health and environmental degradation. The untapped waste has a potential of generating 439 MW of power from 32,890 TPD of combustible wastes including Refuse Derived Fuel (RDF), 1.3 million cubic meter of bio-gas per day or 72 MW of electricity from bio-gas and 5.4 million metric tonnes of compost annually to support agriculture. The existing policies, programs and management structure do not adequately address the imminent challenge of managing this waste which is projected to be 165 million tonnes by 2031 and 436 million tonnes by 2050.</p>	
<b>GUIDING QUESTIONS</b>	
<ul style="list-style-type: none"> <li>• What does a selection of appropriate technologies for W2E entail?</li> <li>• What are the economic, financial, legal and policy risks to implementing W2E solutions?</li> <li>• Which direction should India head for?</li> </ul>	
<b>15:00 – 15:45</b>	<b>Panel Discussion</b>
<b>Panellists</b>	<b>Facilitator: Mr. Dirk Walther</b>   GIZ   India
	<b>Dr. Sanjay A. Mukherjee, IAS</b>   Additional Municipal Commissioner (Project)   Municipal Corporation of Greater Mumbai
	<b>Mr. Carsten Spohn</b>   International technology expert   ITAD e.V.
	<b>Mr. Thomas Block</b>   International operator   Remondis
	<b>Mr. DBSSR Sastry</b>   Vice-President   Ramky Enviro Engineers Ltd.
<b>15:45 – 16:00</b>	<b>Question &amp; Answer</b>
	Participation from the audience

Session 4: 16:00-17:00 – Landfill Bio-mining & Land Reclamation	
<p><b>OBJECTIVES</b> Landfill mining is the process of excavating waste from operating or closed solid waste landfills, and sorting the unearthed materials for recycling, processing, or for other dispositions. Major Indian cities are facing the problem of open landfill and there is a need for sustainable solutions. This session will address the criticality of the current system of separate waste collection. Discussions will also include sources and characterization of materials and energy resources in urban spaces. Panelists will present environmental balances (life-cycle assessment) and supporting case studies.</p> <p><b>GUIDING QUESTIONS</b></p> <ul style="list-style-type: none"> <li>• What are effective techniques of waste source separation and technologies for the extraction of materials and resources?</li> <li>• What are some of the recirculation pathways and market policy instruments to incentivize landfill mining across Indian cities?</li> <li>• What are the economic, financial and legal aspects of landfill mining in India?</li> </ul>	
<b>16:00 – 16:45</b>	<b>Panel Discussion</b>
<b>Panellists</b>	<b>Facilitator: Mr. Brijesh Patel</b>   Managing Director   Indus Media
	(tbc) <b>Mr./Ms.   Governmental / Mumbai Municipal Corporation   India</b>
	<b>Mr. Nagesh Prabhu C.</b>   Director   Zigma Global Environ Solutions Private Limited
	<b>Dr. Suneel Pandey, PhD</b>   Director   Green Growth & Resource Efficiency Division   The Energy and Resources Institute (TERI)
<b>16:45 – 17:00</b>	<b>Question &amp; Answer</b>
	Participation from the audience

Session 5: 17:00-18:30 – Interactive open session between Indian Municipal Corporations/ industry and International technology providers	
<p><b>OBJECTIVES</b> In an open forum the interactive session shall focus on the pressing issues of Indian solid waste management. Waste2Energy is one of the main area where technological exchange is the need of the hour for municipal corporations. The forum shall enable a direct discussion between international partners, experts and the Indian stakeholders of Solid Waste management. The discussion aims to bring out best practices and possibilities of sharing technologies keeping in mind the Indian financial realities.</p>	
<b>17:00 – 18:30</b>	<b>Interactive Discussion</b>
	<b>Facilitator: Mr. Brijesh Patel</b>   Managing Director   Indus Media

# Company profile of SWM Business delegation companies to India for the IFAT India 13 -16, 2015.

Name: **Eggersmann GmbH**  
www.f-e.de

Company profile: Eggersmann is able to meet customers as a one-stop-shop for recycling plants. Eggersmann is not only specialised in the design and construction of mechanical recycling plants but is also well-versed in the area of biological methods. Additionally, respective plants can be almost entirely equipped with products from the own range of Eggersmann. The company furthermore manages projects as a general contractor upon request and follow up with complete customer care or even operates the plant itself. This string of core competences is so far unique among the providers in the recycling industry.

Request: Interested to meet buyers and business partners.

Offer: Eggersmann GmbH offers an internationally unique range of products in the turning technology sector, combining superior product quality with the optimum solution for every application.

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Name: **Erdwich Zerkleinerungssysteme GmbH** (TECHNICAL SALES)  
www.erdwich.com

Company profile: Manufacture of Recycling & shredding technology. Owner managed medium sized business with international activities.

Offer: Recycling & shredding Technology

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Association: **ITAD e.V Interessengemeinschaft der thermischen Abfallbehandlungsanlagen (ITAD) e.V** (MANAGING DIRECTOR)  
www.itad.de

Profile: German Association of Waste-to-Energy Plants represents about 80 Municipal Solid Waste Incinerators (MSWI) and Refuse Derived Fuel Incinerators (RDFI). The members of the association are Private, Public and PPP operators from all over Germany. The annual throughput of Member plants is approximately 24 million tonnes of household, industrial waste and sewage sludge. The public / private waste carriers guarantee safe disposal of waste to almost 66 million people in Germany (80 % of the population).



Name: **PALLMANN Maschinenfabrik GmbH & Co.** (TECHNICAL SALES)  
www.pallmann.eu

Company profile: Founded in 1903, the present company is a major machine manufacturer with worldwide capacities, specializing in size reduction and preparation techniques in various industries, offering more than 1000 machine designs.

Request: Interested to meet buyers and business partners in the Recycling industry.

Offer: Machines and complete plants for the recycling of scrap tires, plastics, WEEE, Cables, waste woods etc

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Name: **REMONDIS Aqua International GmbH** (MANAGING DIRECTOR)  
www.remondis-aqua.de

Company profile: REMONDIS is one of the world's largest recycling, service and water companies. The group company has over 500 branches and associated companies in 34 countries across Europe, Africa, Asia and Australia. 30,000 employees work towards further improving its services, developing innovative recycling processes and perfecting our material flow management systems

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Name: **SHW-SHS-GmbH**  
www.shw-shs.de/en

Company profile: SHW-SHS expertise in the receiving, conveying, dosing and storage of bulk materials that are difficult to handle. As a result of our long-standing experience and focus on the delivery and transportation of bulk materials that are difficult to handle, you can rely on the highest quality standards and the best service performance. We offer also long-term economical solutions. You provide us with your challenging bulk material, we deliver solutions, think laterally and put your ideas into practice.

Request: Interested to understand the Indian SWM sector, meet buyers and business partners.

Offer: We offer advice, planning, project management, construction, production, installation and commissioning as a full-service partner

Name: **Werner Doppstadt Systemtechnik GmbH**  
www.doppstadt.com

Company profile: NA

Request: Contact to local business partners / Dealers/ customers/ policymakers.

Offer: Machines & technical solutions for various fields of Solid waste treatment Dry & wet Mechanical process-Machines for classification of materials, shredders, screening,



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