5th International Symposium MBT & MRF

Mechanical biological treatment (MBT/AWT) of municipal solid waste, material recovery facilities (MRF) with sensor based sorting, recycling

www.waste-to-resources.eu

Conference, Exhibition, Site Visits

Patronage: Peter Altmaier
German Minister of Environment

International Committee:

Prof. Dr. Pinjing He, Tongji University, China; Dr. Matthias Kühle-Weidemeier, Wasteconsult international, Germany; Dr. Abdallah Nassour, University of Rostock, Germany; Prof. Dr. Michael Nelles, University of Rostock, Germany

11th – 14th of June 2013, Hanover, Germany additional introduction seminar 6th-7th of June

Conference with simultaneous translation English – German – Spanish – French

Programme, Registration Form, Information about Exhibition / Fair, Arrival and Accommodation

Silver Sponsor



Metsc

Organisers





5th International Symposium on mechanical-biological Treatment of MSW, Waste Sorting and Material Recovery Technology

2 days small group introduction seminar (6th-7th of June 2013)

3 days international conference (11th-13th of June 2013)

Site visits / technical tour (14th of June)

Take part in world's largest conference on advanced, material specific MSW treatment technology and enjoy a wonderful time in German spring

Learn about the benefits you will get from applying up-to-date waste treatment technologies

What is MBT?

MBT is a combination of mechanical and biological process steps to give individual waste components a treatment that is appropriate to their material properties, emission potential and economical value. MBT is a modular concept that ranges from simple, cheap but still efficient to highly sophisticated concepts.

What are the benefits of MBT for you?

- Reducing landfill gas production (greenhouse gas)
- Reducing leachate contamination and leachate treatment cost
- Reducing the volume of material to be landfilled -> saving precious landfill volume
- Shorter and cheaper aftercare period
- Producing a (more) homogeneous landfill content
- Gaining high energy combustible material, leaving less burdens for future generations
- Extraction of recyclable materials with commercial value

Advantages of MBT compared to other technologies

Vs bioreactor landfill

- Full control and avoidance of gaseous emissions in encapsulated systems
- Industrial process. All of the waste is affected (no dry zones like in a landfill)
- Valuable resources (metals, wood, plastic...) are extracted and not wasted / lost in the landfill
- Leaves better stabilised material in the landfill (aerobic degradation is more efficient than anaerobic on hardly degradable substances)
- Higher usable gas yield (intensive treatment and no loss via open surfaces and leakages like in a landfill)

Vs MSW incineration

- Usually cheaper in investment and operation
- Modular system that can be adopted to the local situation and changing requirements
- Lower financial risks because existing plants can be easier adopted to changing waste quantities and qualities
- Allows economic operation of smaller (decentralized) units
- Not burning water and stones, only feasible materials will be incinerated
- Lower potential of toxic emissions because the production of highly toxic organic compounds at incineration temperatures is avoided (except at the RDF incineration)

The venue

Conference centre and hotel Wienecke XI



(C) Matthias Kühle-Weidemeier, 2010

The town

The town of Hanover has famous historical buildings, parks, museums, a beautiful Zoo and an international airport. It is located at the interchange of major European east-west and north-south motor- and railways.













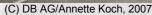
(C) of the town photos: Hannover Marketing und Tourismus GmbH (HMTG)

By the way, there is a lot of night life in Hanover too!

Discover Germany

It is one hour and 40 minutes from Hanover to Berlin in the comfortable high speed ICE-Train (Inter-CityExpress). Depending on the track, ICE trains drive with a speed of up to 300km/h.







(C) DB AG/Bartlomiej Banaszak, 2008



(C) DB AG/Robert Fishman, 2006

Conference and Exhibition

The previous conferences in had delegates from about 40 nations each.







Michael.Balhar@asa-ev.de



The conference is accompanied by a commercial exhibition. Take the chance to meet an exclusive international circle of potential customers. Further information including **Gold and Silver Sponsor packages** is available at www.waste-to-resources.eu/exhibition.html Don't hesitate to contact us!

Some of this year's and previous exhibitors



The week before the conference

Two day introduction seminar to mechanical-biological treatment

- 6th 7th, June 2013, 9.30 18:00. Presenter: Dr. Matthias Kuehle-Weidemeier, Wasteconsult Int'l. Seminar limited to 20 persons. Coffee break, lunch & dinner incl, 2nd day without dinner.
- 1. Introduction, what is MBT, targets
- 2. MBT technologies and examples
 - 2.1. Mechanical treatment
 - 2.2. Biological treatment
 - 2.2.1. Aerobic technologies

2.2.1.2. Biological drying for refuse derived fuel (RDF) production

2.2.2. Combined anaerobic-aerobic technologies

2.2.2.1.	Partial flow dry digestion
2.2.2.2.	Full flow dry digestion
2.2.2.3.	Partial flow wet digestion
2.2.2.4.	Full flow wet digestion
2225	Percolation plants

- 2.3. MBT related technologies
 - 2.3.1. Wet mechanic separation technology
 - 2.3.2. Mechanical-physical stabilisation
- 3. Quality supervision of the major solid MBT output fractions and MBT process control
 - 3.1. Taking representative samples, analytics, which parameters make sense?
 - 3.1.1. Landfill material
 - 3.1.2. RDF
- 4. Control of Gaseous emissions
 - 4.1. Emitted substances, variation of emissions during the process
 - 4.2. Encapsulation
 - 4.3. Air management
 - 4.4. Biofilter
 - 4.5. Regenerative thermal oxidation (RTO)
- 5. Practical experience with MBT in Germany
 - 5.1. History and legal background
 - 5.2. Results of an evaluation of all German MBTs in 2007
 - 5.3. Current situation
- 6. Landfilling of MBT output
- 7. Is agricultural application of MBT output a good solution?
- 8. MBT compared to other technologies
 - 8.1. Incineration
 - 8.2. Bioreactor landfill
- 9. Costs of MBT
- 10. Adoption of MBT to the local situation

Tuesday the 11th of June 2013

9:00 – 11:00	Waste Management Strategies, Concepts and the future role of MBT			
	1. Risk and chances for PPP in waste management and treatment. E. Mohora, IFC International Finance Corporation, Belgrade, Washington, F. Kölsch, Dr. Kölsch Geo- und Umwelttechnik GmbH, Braunschweig, Germany			
	 Discussion of advanced waste management processes and strategies concerning their feasi- bility for developing and emerging countries. W. Pfaff-Simoneit, KfW Entwicklungsbank, Frank- furt, Germany 			
	3. Effects of application appropriate scenarios on waste treatment on municipal solid waste heating value. <i>IS. Antonopoulos, A. Karagiannidis Aristotle University, Thessaloniki, Greece</i>			
	4. Sustainable strategies and technologies – the challenge of MSW management in Poland. M. Rybaczewska-Błażejowska, Kielce University of Technology, Poland			
Coffee Break				
	5. MBT for municipal organic waste management in France: conducting a global performance assessment. AL. Fèvre-Gautier, P. Wavrer, P. Michel, A. Beylot, S. Vaxelaire, J. Villeneuve, BRGM, Orléans, France			
	. EU 2020 targets for household waste : SC, SRF and BMT roles. E. Rada, M. Ragazzi, Trent University, Italy			
	7. Best available techniques for waste management: Elaborating the German contribution for the update of the European BREF documents. M. Kuehle-Weidemeier, Wasteconsult international Langenhagen, Germany			
	8. Regulating MBT: A UK Perspective on Development of BAT for MBT Processes. M. Pryor, M. Caine, Jacobs UK Ltd, Glasgow, UK			
Lunch				
14:30 – 16:00	Waste Management Concepts and International Application of MBT (1)			
	9. Experimental Case Study of Bio-drying Mechanical-Biological Treatment in Korea. <i>Jae-Ram Park, Ui-Ho Cho, Bo-Ram Kim, Yeo-Gyeong Kim, Je-Hyun Nah, Sung-Jin Bae, Geon-Mook Leem, Dong-Hoon Lee, University of Seoul, South Korea</i>			
	10. National waste policy: promoter of secondary resources's market in Brazil. <i>C. Pereira, K. Fricke, CREeD - center for research, education and demonstration in waste management, Hille, Germany</i>			
	11. Municipal waste management, treatment and disposal facilities in Greece: Presentation of current situation and perspectives in the middle of the ongoing financial crisis. A. Karagiannidis, G. Perkoulidis, IS. Antonopoulos, Aristotle University of Thessaloniki, Greece			
Coffee Break				
16:30 – 18:00	Up to date technology presented by suppliers (1)			
	12. Application of semipermeable membranes as amendment or replacement of tunnel systems. M. Binding, CONVAERO GmbH, Erding, Germany			
	13. Modernisation of KBA Hard with SCHUBIO-Process – current situation. R. Schu, K. Schu, EcoEnergy, Göttingen, Germany			
	14. Successful Refurbishment of the Biomethanization Lines at the MBT Burgos and at the Ecoparc I in Barcelona. S. Schulte, BTA International GmbH, Pfaffenhofen, Germany			
	15. Zilina RDF Production Plant, Slovakia. M. Wellacher, Komptech, Frohnleiten, Austria			
19:00	Dinner			

Blue font: 15 minutes presentation, black font: 20 minutes presentation

Wednesday the 12th of June 2013

Dinner

Further development and capability of mechanical biological waste treatment (MBT) 9:00 - 11:0016. Development and future perspectives of MBT in Germany. M. Balhar*, M. Nelles**, *ASA e.V. Ennigerloh, Germany, ** University of Rostock, Germany. 17. Further development of waste management centre Ennigerloh. T. Grundmann, ECOWEST, Ennigerloh, Germany 18. From MBT prior to landfill to material specific treatment and utilisation of waste – Synergies of separate treatment of organic and residual waste to increase efficiency. A. Warnstedt, G. Müller, Rhein-Lahn-Kreis Abfallwirtschaft, Bad Ems, Germany 19. Treatment of (separately collected) organic waste as an option for MBT plants. G. Becker, INFA - Institut für Abfall, Abwasser und Infrastruktur-Management GmbH, Ahlen, Germany Coffee Break **Optimisation of Mechanical Biological Treatment** 11:30 - 13:3020. Experience with various anaerobic processes for digestion of residual waste. N.N, GVoA, Hille, Germany 21. Contribution of MBT to increase energy efficiency and to resource and climate protection in comparison to other treatment options. K. Ketelsen, iba GmbH, Hannover, Germany Mechanical treatment and sorting 22. SolidWasteSim – Simulation of solid waste treatment. Development of a model and simulation system for description of complex mechanical processing in waste treatment plants. C. Böhm, project partnership ARGUS - Statistik, GreenDelta, Technical Univerity of Berlin, Berlin, Ger-23. Taking samples from high calorific waste fractions. A. Steinhoff, UAS Münster, Germany Lunch 24. Experience of an RDF recipient with the energetic valorisation of high calorific fractions from 14:30 - 16:00MBT. K. Wengenroth, BT-Energie, Solms, Germany 25. Characterization of waste materials for optimizing aerodynamic separation steps. B. Krüger, A. Mrotzek, Fraunhofer UMSICHT, S. Wirtz, Ruhruniversität Bochum, Germany 26. Automatic separation of contraries from organic wastes. W. Müller, A. Wöhrle, A. Bockreis, University of Innsbruck, Austria Coffee Break 16:30 - 18:30Up to date technology presented by suppliers (2) 27. Application of laser based process measurement technique for classification of non ferrous metal scraps from waste treatment plants as preparation for sequent sorting. A. Feierabend, C. Bohling, SECOPTA GmbH, Berlin, Germany 28. Maximum Recovery of Recyclable Materials from Municipal Solid Waste thanks to State-ofthe-Art Automated Separation Technology. F. Hottenstein, H. Ouellet, CP Group, San Diego, CA, USA 29. Preparation of biological waste and MSW using the VMpress. K. Dirkes, VMpress Technologies GmbH, Nordhorn, Germany 30. Dynamisation of classic tunnel rotting by combination with an automatic turning system. B. Pickert, K. Runge, I. Steinberg, Eggersmann Anlagenbau BACKHUS GmbH, Edewecht, Germany 31. The application of TAIMWESER ROTOPALA system used for the biological treatment of 375.000 t/a MSW at MBT Plant Basildon/Essex, UK. D. Polster, TAIM WESER GmbH, Bad Oeynhausen, Germany 32. Role of MBT-MRF in achieving high recycling targets. S. Scotti, ECODECO S.r.l., Giussago, 19:35

Thursday the 13th of June 2013

9:00 - 10:30**Emissions and environmental impact** 33. Energy efficient treatment of exhaust air in mechanical biological waste treatment plants. Presentation of first test results. E. Coskun, RWTH Aachen University, Germany 34. Dust, bioaerosol and endotoxin emissions at mechanical biological treatment (MBT) facilities T. Gladding, Open University, Milton Keynes, UK 35. Carbon sink MBT landfill - Interpretation of long-term incubation tests (GS₂₁). E. Binner, P. Lechner, M. Huber-Humer, BOKU-University of Natural Resources and Life Sciences, Vienna, Austria Coffee Break 11:00 - 12:30Application, further development and optimisation of MBT 36. Increasing the economical feasibility of AMB Ecoparcs. J. C. Fernandez, Prevention and Waste Management Barcelona Metropolitan Area, DPGR-AMB, Barcelona, Spain 37. Evaluation and optimisation of static composting reactors. K. Weichelt, TU Dresden. 38. MBT - best technology for treatment of moist MSW. AD and/or Biodrying prior to energy recovery. K. Kanning, K. Ketelsen, iba GmbH, Hanover, Germany Lunch 13:30 - 15:30**Operational experience** 39. Operation of a Waste Management Center in United Arab Emirates – Experiences. R. Göschl, Innovation und Technik GmbH, Seebenstein, Austria 40. Present Status and Appropriate Process of a Material Recovery Facility in South Korea. H. H. Kim, ACI Chemicals Asia Inc., Seoul, South Korea Waste Management Concepts and International Application of MBT (2) 41. BMT solutions for Romanian MSW management: practical perspectives. G. lonescu*, E.C. Rada**, M. Ragazzi**, S. Ciută*. * Politehnica University of Bucharest, Romania, ** Department of Civil, Trento University, Italy 42. North American Perspective on Integrated Solid Waste Management. H. Gershman, Gershman, Brickner & Bratton, Inc., Fairfax (VA), USA Coffee Break 16:00 - 17:3043. The experience of a MBT/MRF strategy to manage household waste in the province of Luxembourg (Belgium - Walloon Region). J. Counet, Idélux-AIVE, Arlon, Belgium 44. Center for research, education and demonstration in waste management - activities in brasil: MBT from planning to financing. K. Fricke, C. Pereira, CReED - center for research, education and demonstration in waste management, Hille, Germany 45. Towards addressing landfill diversion targets in Northern Ireland. S. Barnes*, B. King**, K. Adu-Gyamfi*** and T. Fill***, *Golder Associates (UK), Belfast, Northern Ireland, **Quinn Manufacturing Group Limited, Fermanagh, Northern Ireland, ***Golder Associates (UK) Ltd, Bourne End, England. **End of the Conference**

11th – 13th of June 2013 Posters

Treatment of selected organic waste fractions

- Biogas and Compost Potentials from Animal Manures in Turkey. R. Kulcu, Suleyman Demirel University, Isparta, Turkey
- Environmentally Friendly Exploitation of Organic Wastes and Development of Biogas Technologies in Turkey. N. Azbar, D. Karaalp, G. Caliskan, Ege University, Izmir, Turkey
- Use of membrane supported bioreactor configuration for anaerobic digestion of chicken manure.
 D. Karaalp¹, N. Doruk², N. Azbar¹, N. Dizge², B. Keskinler², ¹Ege University, Izmir, Turkey;
 ²Gebze Institute of High Technology, Kocaeli, Turkey

Other poster topics

Current status of treatment of household waste in selected countries in the Arab region and possible solutions. A. Elnaas, A. Nassour, M. Nelles, University of Rostock

Friday the 14th of June 2013: Site Visits

Additional offer, English and German explanations only, available for conference participants only. Limited to 80 participants.

Site visits are not included in the free ticket for authors.

Waste Management Centre Pohlsche Heide

MBT with partial flow anaerobic dry digestion



· Composting and tunnel anaerobic dry digestion plant for organic waste



• CReED (Center for Research, Education and Demonstration in Waste Management)



(continued: site visits)

Small sized industrial RDF combined heat and power plant Minden



Material Recovery Facility Porta Westfalica (only in tour B)

(max. 20 participants; not suitable for persons with cardiac pacemakers)



(symbol photo)

Time Schedule (depends on traffic conditions, times are not guaranteed!)

Tour A (Pohlsche Heide and CHP RDF Powerplant Minden): Departure 8:30 at Hotel Wienecke XI., arrival Hanover airport 16:45, Hanover central station (Hauptbahnhof) 17:15, Hotel Wienecke XI. 17:45

Tour B (Pohlsche Heide, CHP RDF Powerplant Minden, MRF (sorting plant) Porta Wetfalica): Departure 8:30 at Hotel Wienecke XI., arrival Hanover airport 18:30, Hanover central station (Hauptbahnhof) 18:45, Hotel Wienecke XI. 19:15. Tour B is booked up!

Binding registration for Waste-to-Resources 2013 (V International Symposium MBT & MRF)
I sign up binding for the participation at the marked symposium days. I will pay the registration fee within 14 days after receipt of the invoice. I recognize and accept the terms and conditions (see below).

V10

Please note, that this form does not register you to the accommodation!

ASA GmbH Westring 10				
59320 Ennigerloh, Germany FAX +49 2524 9307-900	Please select (≭)			
	ien eel nollalisigek	Registration fee net		
Tickets for the conference	if we receive your registration until 16 th of March 2013	in case of registration after 16 th of March 2013		
11 th of June 2013 1 st conference day (single day)	□ 199 €	□ 249 €*		
12 th of June 2013 2 nd conference day (single day)	□ 229 €	□ 279 €*		
13 th of June 2013 3 rd conference day (single day)	□ 199 €	□ 249 €*		
3 day ticket 11 th – 13 th of June 2013	□ 529 €	□ 679 €*		
3 day ticket for students up to 29 years (proof!)	□ 159 €	□ 239 €*		
14 th of June site visits tour A: MBT, CHP	□ ୬୭ €	□ 139 €*		
14th of June site visits tour B: MBT, CHP, MRF	□ 129 €	□ 169 €*		
Two day MBT introduction seminar 6 th -7 th of June	□ 399 €	□ 459 €*		
May differ for EU members with VAT ID.	Each plus 19% VAT	Each plus 19% VAT*		
My conference language is: □ English □ French □ German □ Spanish				
□ Mr. □ Ms.				
Title / Name:	First name:			
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Date, signature, chop:	conference ticket will be sent v	ria email (PDF documents)!		
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Legal conference organiser:

ASA GmbH, Westring 10, 59320 Ennigerloh, Tel. +49 2524 9307-180 • FAX +49 2524 9307-900 • www.asa-ev.de Legal organiser of the MBT introduction seminar:

Wasteconsult, Robert-Koch-Str. 48 b, 30853 Langenhagen, Germany

Fon +49 511 / 23 59 383 • FAX +49 511 / 23 59 384 • www.wasteconsult.de

Conference venue:

Wienecke XI. Hotel, Hildesheimer Str. 380, 30519 Hannover,

Fon +49 511 / 126 110 • FAX +49 511 / 12 611 511 • www.wienecke.de

Registration has to be in written form (letter or fax) using this form. After receipt of your registration you will get the invoice which has to be paid within 14 days. After reception of your payment your conference ticket will be sent. The registration is binding. In case of being prevented alternative participants of the same institution are accepted without extra costs. **Cancellations** must be received in written form. In case of cancellation before 30th of May 2013 (date of reception at ASA GmbH) your payment less an administration charge of 50 Euro will be refunded. In case of later cancellation the registration fee will not be refunded, the conference documents are forwarded. If the conference is cancelled by the organiser (this will only happen because of unanticipated reasons), the registration fee will be completely refunded. Further pretensions / requirements are excluded.

Included services: Lunch (inclusive 1 soft drink), dinner (inclusive 1 soft drink or beer) and 2 coffee breaks with coffee and pastry are included at the first and second conference day. The third day includes coffee breaks and lunch. All delegates receive an issue of the conference proceedings in English language (if you selected German, you get the original language edition). Conference programme and programme sequence are subject of alterations.

Arrival and accommodation are not included in the registration fee and have to be organised and paid by the participants themselves.

Judicial: Only German law applies. Jurisdiction is Hanover, Germany. The organizer takes no obligatory supervision and is not liable for lost or broken objects, injuries, accidents, deaths and acts of god.

Accommodation:



Wienecke XI. Hotel, Hildesheimer Str. 380, 30519 Hannover, Phone ++49 (0)511 / 126 110 • FAX ++49 (0)511 / 12 611 511 www.wienecke.de

The hotel holds a limited room contingent for the conference. With reference to the conference participation you can get a single room inclusive breakfast for 89 Euro/day. Other hotels and information about Hanover can be found at www.hanover.de and hotels at www.hrs.com (for finding Hanover, type Hanover with double "n" (Hannover) or at the bottom of the arrival page of our website. https://www.waste-to-resources.eu/venue.html .

Arrival:

Flights to Hanover:

Hanover has an international airport, which is served by many airlines.

Non EU residents should check if they need a visa for Germany and apply for it as soon as possible!

Railway, Underground and Tram:

Starting at Hanover airport:



Take urban railway ("S-Bahn") S5 direction Hameln and get off the train at Hanover main station ("Hauptbahnhof"). Go down 2 floors to the Underground station.

Starting at Hanover main station (DB):



Take Underground line 1 direction Laatzen/Sarstedt or Underground line 2 direction Rethen. Deboard at the station Wiehbergstrasse



2 minutes footpath to hotel Wienecke XI.

By car:

Take Motorway A2 or A7 until interchange Hanover east ("Autobahnkreuz Hannover Ost"). Follow Motorway A7 heading south (if you are coming from the south, your description starts now):

Leave the Motorway A7 at exit Hannover – Anderten. Follow road B65 ("Suedschnellweg") direction Hanover fair ("Messe") until exit Doehren / Zentrum. Turn left at the first traffic light. Now you have reached the Hildesheimer Strasse. The conference Hotel "Wienecke XI.") is 2 km ahead (direction south) on the right side of the road.

You can get a detailed map of Hanover at www.stadtplandienst.de .