

18-20
May 2021

Online
conference

Conference in English Language

WASTE-TO-RESOURCES 2021

9 International Symposium Circular Economy, MBT, MRF & Recycling

Resources and Energy from Waste Conference, seminar And Exhibition

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Svenja Schulze
German Minister of Environment

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WASTE-TO-RESOURCES 2021

Conference and Exhibition



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WASTE-TO-RESOURCES 2021

Wednesday, 12th of May 2021



Introductory seminar to mechanical -biological treatment

Live: 09.30 – 18:00 CEST. Presenters: Dr. Matthias Kuehle-Weidemeier, Dr. Ludwig Streff

ON DEMAND: Recorded Stream 13th of May 0:00-24:00 CET

Seminar topics:

Selection of appropriate waste treatment technologies

Introduction, what is MBT, targets

MBT technologies and examples

- Mechanical treatment

- Biological treatment

 - Aerobic technologies

 - MBT prior to landfill

 - Biological drying for refuse derived fuel (RDF) production

 - Combined anaerobic-aerobic technologies

 - Partial flow dry digestion

 - Full flow dry digestion

 - Partial flow wet digestion

 - Full flow wet digestion

 - Percolation plants

- MBT related technologies

 - Wet mechanic separation technology

 - Mechanical-physical stabilisation

Quality supervision of the major solid MBT output fractions and MBT process control

- Taking representative samples, analytics, which parameters make sense?

 - Landfill material

 - RDF

Control of Gaseous emissions

- Emitted substances, variation of emissions during the process

- Encapsulation

- Air management

- Biofilter

- Regenerative thermal oxidation (RTO)

Practical experience with MBT in Germany

- History and legal background

- Results of an evaluation of all German MBTs in 2007

- Current situation

Landfilling of MBT output

Is agricultural application of MBT output a good solution?

MBT compared to other technologies

- Incineration

- Bioreactor landfill

Costs of MBT

Adoption of MBT to the local situation



WASTE-TO-RESOURCES 2021

Tuesday, 18th of May 2021 – Hall 1



09:00 – 10:15 Block 1

Waste management and zero waste strategies

1. Transitioning to a Zero Waste Society. *Peter S. Lobin, Seventh Generation Advisors, Santa Monica, United States*
2. Enhancing Waste Reduction, Reuse and Recycling by Behavior Change. *Yadav Uttam, Abu Dhabi, UAE*
3. Zero Plastic Waste Cities – Sustainable Municipal Waste Management Through Social Business. *Christina Jäger, Yunus Environment Hub GmbH, Wiesbaden, Germany*

10:45 – 12:00 Block 2

Practical experience and new facility concepts

5. Paris XVII Material-from-Waste Facility in Operation - Two Years After 2019 Presentation in WtR Hanover, the Operation Experience of Paris XVII Sorting & Recycling Facility, a Material-from-Waste Plant, by its Supplier and Operator. *M. Christophe Cord'homme, CNIM Group, Paris, France*

Processing and recovery of organic waste fractions

6. Biogas From OFMSW in Mexico by Using BEKON Dry-Fermentation. *Ignacio Benitez, BEKON GmbH, Germany*
7. Practical Implementation of Biological-oxidative Desulfurization of Biogas. *Alejandra Lenis, Dr. Kristoffer Ooms, M.Sc. Cedric Thull, Research Institute for Water and Waste Management at RWTH Aachen University (FiW) e. V., Germany*

13:30 – 14:45 Block 3

8. Waste Air Purification in the MBT – a field report. *Kai Weber, Wessel Umwelttechnik GmbH, Germany*

Mineral and construction waste

9. Management of Mineral Extraction Residues: Best Practices in Lombardy Region (Italy). *Alessandra Diotti, Alberto Clerici, Giovanni Plizzari, Sabrina Sorlini, Department of Civil Engineering, Architecture, Land, Environment and Mathematics, University of Brescia, Italy*
10. Building Material Management: System Change in Minnesota (USA) and Beyond. *Melissa Wenzel, Minnesota Pollution Control Agency, United States*

15:15 – 16:05 Block 4

11. The Effect of Granular Correction of Dredged Sediments by Other Wastes on the Mechanical and Environmental Properties of Established Mixtures. *Zeinab Mkahal, Laboratory of Civil Engineering and Geo-Environmental, IMT-Lille-Douai, France*
12. Remediation of Dredged Sediments by Electrokinetic Process Prior to Their Beneficial Reuse. *Mathilde Betremieux, Laboratory of Civil Engineering and Geo-Environmental, IMT-Lille-Douai, France*

**Note: Times are Central European Summer Time (CEST)
Berlin Time Zone**

WASTE-TO-RESOURCES 2021

Tuesday, 18th of May 2021 – Hall 2



08:30 – 09:20 Block 5

Waste management in Asia

14. Estimation of Resource Recovery Potential from Municipal Solid Waste (MSW) in Municipalities of Nepal. *Dhundi Raj Pathak, Engineering Study & Research Centre, Nepal, Center of Research for Environment Energy and Water (CREEW), Tribhuvan University, Kathmandu, Nepal*
15. Indonesia Waste Bank Transition and Transformational System: A Pathway of Circular Economy Development. *Ade Brian Mustafa, Masahiko Haraguchi, School of Environmental Science and Engineering, Shanghai Jiao Tong University, Shanghai, China*

09:50 – 11:05 Block 6

16. The New Integrated Waste Management Centre in Singapore. *Benoit Englebert, Keppel Seghers Belgium NV, Willebroek, Belgium*
17. A Technical, Economical, and Environmental Comparison of Composting and Anaerobic Digestion of Organic Waste Fraction of Municipal Solid Waste in Sri Lanka. *W.A.M.A.N. Illankoon, S. Sorlini, Civil, Environmental, International Cooperation, and Mathematical Engineering, University of Brescia, Italy*
18. Separate Collection and Recycling of Waste as an Approach to Combat Marine Litter - WWF Pilot Project in the Mekong Delta, Vietnam. *Dr.-Ing. Wolfgang Pfaff-Simoneit, WPS Consult UG (limited liability), Darmstadt, Germany*

13:00 – 14:15 Block 7

Waste Management in emerging and developing Countries

19. Solid Waste Management Decision Making for Developing Countries Through Life Cycle Assessment Tool: A State-of-the-Art Review. *Ketan V. Shah, Melanie L. Sattler, University of Texas at Arlington, USA*
20. Inclusive circular waste management in the refugee camps – strategy for Rohingya Refugee Camp. *Piotr Barczak, Katharina Wiese, Enzo Favoino, Stephane Ardit, European Environmental Bureau, Belgium*
21. Plastic Waste in Kinshasa, DR Congo, as a Source of RDF. *J.M. Vaz¹, A. Branha², ¹Ecogestus, Lda., Figueira da Foz, Portugal, ²CERNAS, Polytechnic Institute of Coimbra, Portugal*

14:45 – 15:35 Block 8

22. Results from Large Scale MSW to RDF in Developing Countries – How Proper Waste Management Helps to Achieve the Intended Nationally Determined Contributions (INDCs) of Developing Countries. *Jan Gressmann, Eggersmann Anlagenbau Concept GmbH, Germany*
23. 10 years of National Waste Policy in Brazil: The Legacy of Technological and Market Approach. *Christiane Dias Pereira, Technische Universität Braunschweig and WhiteLabel-TandemProjects UG, Germany*

WASTE-TO-RESOURCES 2021

Wednesday, 19th of May 2021 - Hall 1



09:00 – 10:15 Block 9

Concepts and data on waste management

24. New "Green Deal" - Potential for a Sustainable and Pollutant-Free Circular Economy? *Dr Beate Kummer, Kummer umwelt:kommunikation GmbH, Rheinbreitbach, Germany*
25. Less Waste, Less Landfilling, More Recycling. *Peter Hoffmeyer, Chairman of the Supervisory Board, Nehlsen AG, Bremen, Germany*
26. More Recycling and More Economical Recycling by Optimising Collection. *Dr. Clemens Pues, PreZero Germany KG, Porta Westfalica, Germany*

10:45 – 12:00 Block 10

27. Material Flow Analysis of Materials for Reuse and Recycling in the Greater Dresden Area. *M. Sc. André Rückert, Institute of Waste and Recycling Management and Circular Economy, TU-Dresden, Germany*
28. Zero Waste Cardboard Technology to Support Product Stewardship. *PhD Aharon Arakel, Pact Renewables Pty Ltd, Sydney, Australia*
29. Distributor Take-Back of Waste Electrical and Electronic Equipment - A Successful Model? *Dr Ralf Brüning, Dr Brüning Engineering UG (limited liability), Brake, Germany*

13:30 – 14:45 Block 11

30. Remote Signature Simplifies the Electronic Waste Records Procedure eANV. *Alexander Marschall, Axians eWaste GmbH, Ulm, Germany*

Waste technology

31. Contribution of Biological Residual and Waste Materials to the Bioeconomy - Presentation of a New Approach for the Treatment of Biological Residual and Waste Materials to Produce Bio-Based Materials. *Kyra Atessa Vogt, M.Eng., Prof. Dr.-Ing. Iris Steinberg, Department of Civil and Environmental Engineering, University of Applied Sciences Darmstadt, Germany*
32. Alternative Fuels and How to Fail. *Dr. Hubert Baier, WhiteLabel-TandemProjects UG, Münster, Germany*

15:15 – 16:30 Block 12

33. Organic Waste for the Production of Hard Carbons for Batteries - A Life Cycle Assessment Perspective. *Huiting Liu, Claudia R. Tomasini, Marcel Weil, Institute for Technology Assessment and Systems Analysis, Karlsruhe Institute of Technology, Karlsruhe, Germany*

Circular economy during the Corona crisis

34. Waste Management Challenges in Romania During the COVID-19 Pandemic. *Florin-Constantin Mihai, Environmental Research Center "CERNESIM", University of Iasi, Romania*
35. Using Computer Vision to Strengthen Resilience of Waste Sorting Infrastructure During the Pandemic. *Victor Dewulf, Recycleye, London, England*

WASTE-TO-RESOURCES 2021

Wednesday, 19th of May 2021 - Hall 2



08:00 – 09:15 Block 13

Waste Management in Western Asia, Middle East, Black Sea and Mediterranean Countries

36. Households' Willingness to Pay for a Local Recycling Program: A Case Study from Lebanon. *Mary Abed Al Ahad^{1,2}, PhD; Ali Chalak¹, PhD; Souha Fares¹, PhD; Rima R. Habib¹, PhD* ¹American University of Beirut, Lebanon, ²University of St Andrews, St Andrews, Fife, Scotland, United Kingdom
37. Sustainability Challenges in Solid Waste Management Services in Gaza Strip: Rafah City Case Study. *Samir Alnahhal, Samir Afifi, Institute of Water and Environment, Al Azhar University, Environment and Earth Science, Faculty of Science, Islamic University of Gaza, Gaza, Palestine*
38. Waste Prevention and Recycling Strategy for Tbilisi City, Georgia. *Virginie Herbst, Dr. Ludwig Streff, ICP Ingenieurgesellschaft Prof. Czurda & Partner mbH, Karlsruhe, Germany*

09:45 – 10:35 Block 14

39. New Orientation of the Waste Management Strategy in Durban, South Africa as Contribution to the City's Ambition to Achieve Carbon Neutrality. *Dr.-Ing. Wolfgang Pfaff-Simoneit, WPS Consult UG (limited liability), Darmstadt, Germany*
40. Plastic Wastes as a Resource: Lebanese Experience. *Arwa A. ElZein, laceco, Beirut, Lebanon*

12:00 – 13:15 Block 15

Slag recovery (recovery of incinerator bottom ash)

41. Grate-for-Riddlings - Improved Fine Slag Processing and Impact on the CO₂ Footprint of Waste Incineration. *Ivo Budde, Hitachi Zosen Inova AG, Zurich, Switzerland*
42. Technical Assessment of a Bottom Ash Treatment Plant - A Case Study. *K. Johnen, A. Feil, RWTH Aachen University, Department of Anthropogenic Material Cycles, Aachen, Germany*
43. Process Development to Improve Volumetric Stability of BOF Slag. *Mukund Manish, JSW Steel Limited, Karnataka, India*

13:50 – 13:40 Block 16

Geomechanical properties of MBT-Output

44. Settlement Characteristics of Saturated Mechanical Biological Treated Waste from Croatia. *Nikola Kaniški, Faculty of Geotechnical Engineering, University of Zagreb, Croatia*
45. Maximum and Minimum Void Ratio Characteristics of MBT Waste. *Nikola Hrnčić, Faculty of Geotechnical Engineering, University of Zagreb, Croatia*

WASTE-TO-RESOURCES 2021

Thursday, 20th of May 2021 - Hall 1



09:00 – 10:15 Block 17

Plastic waste

- 48. A Comparison of the Quality of Mechanically Recycled Plastics Made From Separately Collected and Mechanically Recovered Plastic Packaging Waste. *Dr. E.U. Thoden van Velzen, Wageningen Food & Biobased Research, The Netherlands*
- 49. Sorting of Film Mixtures to Increase the Recycling Rate. *Maria Schäfer, Peter Clemenz, Heinz Schnettler, Zittau/Görlitz University of Applied Sciences - Institute for Sustainable Process Development, Surface Technology, Peat and Natural Products Research (iTN + IOT), Zittau, Germany.*
- 50. Conditioning of Plastic Fractions by Means of NIR Sorting to Reduce the Share of Thermal Recycling. *Anett Kupka, Lukas Knauth, Zittau/Görlitz University of Applied Sciences - Institute for Sustainable Process Development, Surface Technology, Peat and Natural Products Research (iTN + IOT), Germany*

10:45 – 12:00 Block 18

- 51. Opportunities and Risks from the Amendment of the KrWG for Plastics in Earthworks and Civil Engineering. *L. Vollmert, H. Ehrenberg, M. Tazl, NAUE GmbH & Co. KG, Espelkamp, Germany*

Liquefaction and chemical recycling

- 52. Chemical recycling - 30 years of Research and Development - Status Today. *Reinhard Schu, Kirsten Schu, ume urban mining engineers, Göttingen, Germany*
- 53. Production of Liquid Raw Materials With the CARBOLIQ Process - First Experiences. *Dr Nicole Karpensky, Recenso GmbH, Remscheid, Germany*

13:30 – 14:45 Block 19

- 54. System Integration of Methanol Synthesis From Combustion Exhaust Gases and Hydrogen in an Existing Waste Incineration Plant Using the Example of the Waste Incineration Plant in Bonn. *Carl Fritsch, Dr. Kristoffer Ooms, Alejandra Lenis, Research Institute for Water and Waste Management, RWTH, Aachen, Germany*

Hydrogen economy

- 55. Hydrogen From Waste. *Robert Bock, Plagazi AB, Bastad, Sweden. Bock Handelsvertretung GmbH, Oberndorf, Germany.*
- 56. Biomass Conversion and Hydrogen Production. *A. Kuhles, H. Kohler, GRENOL GmbH, Ratingen, Germany.*

15:15 – 16:30 Block 20

- 57. Hydrogen From Biogenic Sources With Negative CO₂ Balance for Fuel Cell Waste Collection Vehicles. *Dr Jens Hanke, Graforce GmbH, Berlin, Germany*
- 58. Hydrogen Harvest Cycle - Waste Recycling by Removing Organic and Inorganic Pollutants From the Waste by Wet Mechanical Separation. *Reinhard Schu, Kirsten Schu, ume urban mining engineers, Göttingen, Germany*

Fire protection in waste treatment and recycling plants

- 59. Why is Targeted Extinguishing Control the Better Solution? Prerequisites for Targeted Extinguishing Control Via Infrared Systems and the Technical Implementation in Practice. *Mark Müller, Orglmeister Infrarot-Systeme GmbH & Co.KG, Walluf, Germany*

WASTE-TO-RESOURCES 2021

Thursday, 20th of May 2021 - Hall 2



08:00 – 09:15 Block 21

Recovery of Metals

- 60. Sorting of Secondary Metals With LIBS. *Dr. Christian Bohling, Dr. Madlen Chao, SECOPTA analytics GmbH, Teltow, Germany*
- 61. Thermal Metal Recovery From Tertiary Waste. *Helmut Lugmayr, Kurt Bernegger, Christian Mlinar, Bernegger GmbH, Molln, Austria*
- 62. Spent Automotive Converters as a Secondary Resource of Platinum Group Metals. *Martyna Rzelewska-Piekut, P. Krawczyk, Z. Wiecka, M. Regel-Rosocka, Poznan University of Technology, Poznan, Poland*

09:45 – 11:00 Block 22

- 63. Hydrometallurgical Recovery of Metal Ions from Spent Catalytic Converters. *Zuzanna Wiecka, Ewelina Łopińska, Martyna Rzelewska-Piekut, Magdalena Regel-Rosocka, Poznan University of Technology, Poznan, Poland*

Separation and processing of waste fractions

- 64. TURBOSEPARATOR - Machine for Unpacking (Cardboard/PET/Foils/Plastic/Preserves, Etc.). *Ferdinand Schmalholz, Umwelt Elektronik GmbH & Co. KG, Geislingen, Germany*
- 65. Separation of Debris and Bulk Materials in Free Fall. *Markus Eck, OptoSort GmbH, Austria*

12:00 – 13:15 Block 23

Advanced MBT processes with wet mechanical separation

- 66. Clean Compost Out of Mixed Solid Waste. *Bruno Mattheeuws, Organic Waste Systems, Gent, Belgium*
- 67. No Fear of Water! Residual Waste From Separate Collection and Rejects From the Paper Industry: Recycling Instead of Expensive Disposal. *Dr. Matthias Kühle-Weidemeier, ICP Ingenieurgesellschaft, Karlsruhe, Germany*
- 68. Energy From Mixed Waste Without Separation and Sorting and Without Residual Waste. *Dipl.-Ing. Frank Riedel, Inter Engineering, Villingen, Germany*

13:45 – 15:25 Block 24

Pyrolysis, Plasma, Gasification

- 69. Assessing Pyrolysis for the Recovery of the Composted Organic Fraction of the Municipal Solid Waste (OFMSW). *Jessica Graça BSc. MSc. PhD., Chemical Sciences Department, Dublin City University, Ireland*
- 70. Plastic Waste Pyrolysis. *Dr. Rinku Verma University of Agricultural sciences, GKVK, Bangalore, India*
- 71. Comparison of Three Gasification and Seven Biogas Plants for Energy Production from Organic Waste. *Osman Turkmen, TRL Group, London / Istanbul*
- 72. Perspectives on Waste to Energy Conversion by Microwave Plasma Gasification. *Prof. Dr. Melda Carpinlioğlu, Mechanical Engineering Department, University of Gaziantep, Turkey*

WASTE-TO-RESOURCES 2021



Registration:

Registration is done online at www.waste-to-resources.eu or register directly by using the following link:

<https://px.convent-registration.de/cgi-bin/regform.exe?company=76227&Event=WASTE21&Language=1&Entry=9>

In case of any problems concerning your registration, please contact waste2resources@icp-ing.de

Registration fees	€ net
MBT-Introductory Seminar – 12 May 2021	270
Congress card, regular, 3-day-ticket from 18 – 20 May 2021	450
Day ticket - Tuesday 18 May 2021	200
Day ticket - Wednesday 19 May 2021	200
Day ticket - Thursday 20 May 2021	200
Congress card, special price, 3-day-ticket 18 – 20 May 2021 Only for participants from: Africa, Asia, Latin America. Except: Japan, Korea, Russia, Singapore, Saudi Arabia, UAE, Kathar, Israel	350
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Exhibition fee incl. 1 attendant: (support persons have full conference access)	990

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