3rd International VDI Conference 2015

Energy and Materials from Waste

Renowned speakers will present their results on the following topics:

- Waste Management in Europe: Policy, Legislation & Market Trends
- Recycling and Recovery of Materials: Waste Streams, Biowaste, Plastic Streams, Recovery of metals and minerals from IBA
- Energy Recovery & Plant Performance Optimization
- Operators’ Best Practice Examples
- Opportunities: Emerging Markets & New Technologies
- Challenges: Adaptation to overcapacity

+ 3 Workshops

Conference Chairs:
Jan Manders, Deputy President, CEWEP, Brussels, Belgium
Dr.-Ing. Ragnar Warnecke, Managing Director, Gemeinschaftskraftwerk Schweinfurt GmbH, Schweinfurt, Germany

Date and venue:
May 06–07, 2015
Düsseldorf, Germany

An event organized by VDI Wissensforum GmbH
www.vdi-international.com/wastetoenergy
10:00 Registration & welcome coffee

10:30 Chairs’ welcome and opening address

I. WASTE MANAGEMENT IN EUROPE: POLICY, LEGISLATION & MARKET TRENDS

10:40 Waste-to-Energy in EU legislation
- Europe’s circular economy: Less landfilling and more recycling
- What about quality recycling?
- WtE’s role in an integrated waste management system

Dr. Ella Stengler, Managing Director, CEWEP, Brussels, Belgium

11:20 Market trends – How do operators deal with changing and reduced market volumes in Europe?
- Current market situation and consequences for WtE operators in Europe
  » Overcapacity and declining waste volumes
- Political influence
- Mitigation measures of WtE operators to deal with the challenges
- Increased flexibility and push on optimization along the whole value chain
  » Waste flow management
  » Technology and efficiency
  » New products and new markets

Dipl.-Ing. agr. SC. Michael Class, Managing Director, co-author: Dipl. Ing. Philipp Chartschenko, MA, MVV Umwelt GmbH, Mannheim, Germany

12:00 The WI BREF update process – Key issues and latest developments
- BREF legislation – IED and the Seville process
- The commission’s interpretations of IED, chapter II vs. chapter IV
- Main issues of stakeholders: EIPPCB, MS, industry and NGOs
- Outcome of the KoM and current phase of the update process, ways to influence the process
- Possible outcome of the process and consequences for incineration and for operators

Henrik Lindstahl, M.Sc., Senior R&D Adviser, Division Energy, Tekniska verken in Linköping AB, Sweden

II. RECYCLING AND RECOVERY OF MATERIALS

14:00 Waste streams in Europe: The resource revolution and its consequences for the recycling industry
- Waste streams: The increase of change rates and its implications
- Treatment methods: Present and future
- Diffusion and the entropy problem
- The perfect example: Car recycling
- Future challenges and opportunities

Dr. Philipp Kempkes, co-author: Dr. Ansgar Fendel, REMONDIS Assets & Services GmbH & Co. KG, Lünen, Germany

14:40 Plastics Recycling Europe
- Plastic Streams in Europe
- Plastics Recycling
- Collection and sorting
- Recycling targets
- Eco design – The new way ahead?

Antoon Emans, President, Plastics Recyclers Europe, Brussels, Belgium

15:20 From waste to biobased: Why, when and how?
- The current situation of organic waste treatment in Europe
- Energy production from organic waste in the Netherlands – Anaerobic digestion and bioenergy plants
- Resource production from organic waste – Why and how?
- Future prospects for organic waste treatment

Ing. Olaf Fennis, Business Development “Waste to Biobased”, Attero B.V., Haelen, The Netherlands

16:00 Networking and coffee break

12:40 Lunch
16:30 Recovery and further processing of IBA: Implementing the Green Deal IBA in the Netherlands
- Short overview on the Green Deal
- Modification of soil-washing technique for IBA
- Results in 2013 and 2015
- Scope of the washing plant to be built second half 2015

Dr. Jan-Peter Born, Business Development, N.V. HVC, Alkmaar, The Netherlands

17:10 Recovery of metals and minerals in IBA in Denmark – Second stage
- Plant design with focus on special features: Metal from fines, stainless steel and up-grading of the mineral part
- Achievements: Metal potential/yield, sorting efficiency, moisture content
- Use of minerals in a restricted end of waste framework

Jens Kallesøe, M.Sc. Eng., Managing Director, Afatek A/S, Copenhagen, Denmark

III. ENERGY RECOVERY & PLANT PERFORMANCE OPTIMIZATION

17:50 Energy recovery optimization and plant performance indicators – New and existing plants
- New plants – Balancing risk when choosing plant steam parameters
- Options for retrofitting a condensing plant for district heat production
- Online performance monitoring
- Better online determination of boiler efficiency and fuel LHV (flue gas correlation)
- Other (online) key performance indicators of the plant performance

Lasse Tobiasen, M.Sc. Eng., Chief Consultant, Department Waste-to-Energy, Ramboll Denmark A/S, Copenhagen, Denmark

09:00 Multiple use of Waste-to-Energy – Best practice operator’s example
- Methods and key performance indicators of WtE with multiple use of energies
- Eco – industry, a new concept
- WtE for current production, process energy, district heating and green houses

Edi Blatter, General Manager, Satom SA, Monthey, Switzerland

09:40 Opportunities for heat and CO₂ supply – Ultimate harvesting of combustion products
- Diversifying and maximizing the output of WtE
- Heat and CO₂ supply
- CO₂ application in greenhouses – Dutch best practice
- CO₂ capture of WtE flue gases

Ing. Michiel Timmerije, Director, co-author: ir. Hans Wassenaar, Energy and Residues, AVR, Duiven, The Netherlands

10:20 Networking and coffee break

10:50 Retrofit of the flue gas cleaning at the Krefeld waste and sludge incineration plant
- Initial plant condition: State analysis and necessity of a flue gas cleaning retrofit
- Process design: SCR vs. SNCR and wet cleaning vs. dry sorption
- Decision making under changing legal and market conditions
- Concept implementation under operating conditions
- Plant refit: Installation of new components and modification of existing components
- First operating experience

Dr.-Ing. Hermann-Josef Roos, Managing Director, co-author: Dipl.-Ing. Thomas Brangers, EGK Entsorgungsgesellschaft Krefeld GmbH & Co. KG, Germany

Get together
At the end of the first conference day we kindly invite you to use the relaxed and informal atmosphere for deepening talks with other participants and speakers.
IV. EMERGING MARKETS & NEW TECHNOLOGIES

11:30 Comparative evaluation of waste thermal treatment technologies
- Comparison: Conventional grate combustion with alternative thermal treatment technologies
- Discussing basic features, advantages and caveats of the most relevant waste thermal treatment technologies
- Evaluation of energy balances and estimation of energy recovery efficiency for each technology
- Assessing most relevant design and operational issues
- Estimating costs and potential for market penetration

Stefano Consonni, Ph.D., Professor for energy systems, electricity and heat from solid fuels, co-author: Federico Viganò, Politecnico di Milano, Piacenza, Italy

12:10 Lunch

12:30 Energy and material recovery from waste using proven waste gasification and melting technology (direct melting system)
- Background of gasification technologies
- Introduction of proven waste gasification technology
- Energy and material recovery from waste via gasification

Nobuhiro Tanigaki, M.Sc., Chief Technical Manager, co-author: Yoshihiro Ishida, General Manager, NIPPON STEEL & SUMIKIN ENGINEERING CO. LTD, Düsseldorf, Germany

14:10 Towards integrated waste management systems – Development of WtE plants in Poland
- Statistical outlook on the current waste management situation
- Description of six WtE plant projects
- Description of future WtE plant projects (Olsztyn, Gdansk, Lodz)
- Outlook on the relevant Polish legislation

Dipl.-Ing. Marta Gurin, Technical & Scientific Officer, CEWEP, Brussels, Belgium, co-author: Tadeusz Pajak, Ph.D., AGH University of Science and Technology in Cracow, Poland

14:50 Future WtE markets and requirements – Status quo and potentials
- Legal requirements and preconditions for WtE projects in future markets (Middle East, Latin America, South-East Asia and Turkey)
- MSW arisings, applied disposal methods and potentials for WtE projects
- Technical challenges and outlook

Dipl.-Wirtsch.-Ing. Gerhard Lohe, Director Sales, Doosan Lentjes GmbH, ESWET member, Ratingen, Germany

15:30 Conference chairs’ closing remarks

15:45 End of conference

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THIS IS WHAT LAST YEAR’S PARTICIPANTS SAID

“It is the first time that German knowledge is presented in English for an international audience – very good!”

“I did get a very good overview of the different challenges, legislation and obstacles that we will face in the future Waste to Energy plants”

“Good quality of speakers”

International VDI Workshop

WASTE MANAGEMENT IN BRAZIL
Present and Perspectives of Transition

Date and venue:
May 05, 2015
Düsseldorf, Germany

Workshop Chairs:
Mark Döing, Geographer and General Manager, ecoprog GmbH, Cologne, Germany
Prof. Dr. José Fernando Thomé Jucá, Professor of Federal University of Pernambuco, Recife, Brazil

CONTENT
Solid-waste management is a major challenge in urban areas throughout the world. Without an effective and efficient solid-waste management program it can result in health hazards and have a negative impact on the environment. For this reason Brazil’s government introduced a new waste law in 2010 – including a reduction of landfilling activities, one of the driving forces for future WtE activities. The workshop will give an overview of the recent developments within Brazil and some important background facts for those interested in this new market.

The international VDI Workshop will look at:

Profile of the waste market in Brazil
- Present situation
- Current development
- Perspectives of transition

Legislation and financing
- Waste legislation 2010 and limitation of landfill
- State support for WtE as renewable Energy

New WtE projects
- Economic and political aspects and concerns
- Sustainability and reverse logistics

Participants are invited to bring in their own questions.
**INTERNATIONAL VDI WORKSHOP**

**CHALLENGES OF FLUE GAS TREATMENT IN THE FUTURE – INTELLIGENT CONCEPTS**

**Date and venue:**
May 08, 2015
Düsseldorf, Germany

**Workshop Chairs:**
- **Prof. Dr.-Ing. Rudi H. Karpf**, Managing Director, ete.a Ingenieurgesellschaft für Energie und Umweltengineering & Beratung mbH, Lich, Germany
- **Dr.-Ing. Martin Pohl**, Managing Director, ENVERUM GmbH, Dresden, Germany

**CONTENT**
The interactive workshop “Challenges of flue gas treatment in the future – Intelligent concepts” will give an overview and better understanding about different technologies according capability, energy efficiency and costs.

**Overview: Different flue gas treatment technologies**
- Characterization of dry-, semi-dry- and wet-systems
- Comparison: Advantages and disadvantages of different technologies
- Capability of several systems
- Additives

**Concepts for retrofit and new installations**
- Changes from wet- to dry-systems
- Two stage dry flue gas treatment
- SNCR/SCR according legislation
- What has to be recognized and what to be aware of (components, materials …)?

**Energy recovery and optimization from flue gas treatment systems**
- Energy balance for 8 different flue gas treatment systems depend on raw gas concentrations and emission levels
- Emissions related energy indicators
- Influence by the combustion
- General ideas to reduce the energy consumption

Interactive discussion: Finding solutions for flue gas cleaning systems – Bring your own questions to the workshop

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**INTERNATIONAL VDI WORKSHOP**

**CORROSION AND OPTIMIZATION OF STEAM GENERATORS**

**Date and venue:**
May 08, 2015
Düsseldorf, Germany

**Workshop Chair:**
**Dr.-Ing. Ingo Zorbach**, Head of Product Development, Steinmüller Babcock Environment GmbH, Gummersbach, Germany

**CONTENT**
The workshop chair will present typical corrosion mechanisms in combination with examples. He will explain the novel online-measurement methods of boiler corrosion and compares it to offline methods. Flue gas flow in the boiler and typical problems of simulation as well as limits of CFD simulations will be explained. The workshop ends up with the influences of the boiler design on corrosion and the explanation of methods for corrosion mitigation.

**Corrosion mechanisms**
- Corrosion mechanisms
- Influences on corrosion
- Typical corrosion damages

**Corrosion measurement**
- Offline methods
- Online methods

**Computational Fluid Dynamics (CFD)**
- Computational Fluid Dynamics in boiler design process
- Secondary air system
- Combustion simulation
- Limits of simulations

**Optimization**
- Cladding and Refractory
- Superheater design
- Superheater coatings and cladding
- Flue gas flow in boiler ducts

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In order to give participants an even bigger spectrum of topics and networking possibilities, the international conference **Corrosion in Waste to Energy Plants** will be allocated parallel to this conference. Participants to this conference are eligible to attend both conferences for the price of one.

**International VDI Conference 2015**

**CORROSION IN WASTE TO ENERGY PLANTS**

**Date and venue:**
May 06–07, 2015
Düsseldorf, Germany

**Conference Chair:**
Dr. Dipl.-Min. Wolfgang Spiegel,
Managing Director, CheMin GmbH,
Augsburg, Germany

**Renowned speakers will present their results on the following topics:**
- Reasons and consequences of corrosion in WtE plants
- Field reports: Operational experience with corrosion and its handling
- Monitoring, probes, testing, and methods for lifetime prediction
- Explanation and evaluation of solutions currently available
- Cladding, spray coating, additives, and boiler cleaning

**THE FOLLOWING OPERATORS HAVE CONFIRMED THEIR PARTICIPATION:**
AEB Amsterdam • EVN Abfallverwertung Niederösterreich GmbH • MVV Umwelt O&M GmbH

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3rd International VDI Conference 2015

Energy and Materials from Waste

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- **PERSONAL VDI MEMBERS + VAT**
  - VDI Conference 06.–07.05.2015 (Düsseldorf) (06KO959015) € 1,290

- **Workshop 05.05.2015:**
  - The challenges of flue gas treatment in the future – Intelligent concepts (06ST959002) € 810
  - Waste management in Brazil – Present and perspectives of transition (06ST969001) € 810

- **Workshop 08.05.2015:**
  - Corrosion and optimization of steam generators (06ST928001) € 810
  - Corrosion and optimization of steam generators (06ST928001) € 810

- **Package Price** please tick the boxes
  - (conference + 1 workshop) € 1,900
  - (conference + 2 workshops) € 2,550

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