1st Swedish Conference on Sewage Sludge Biochar

11-12 OCTOBER / STUDIO MEETING POINT, MALMÖ / STUDY VISIT 13 OCTOBER

Programme and registration:

Testbädd Ellinge VINNOVA sweden water research VASYD

PROGRAMME OVERVIEW

October 11

Registration	08:30
Introduction	09:00
General about sewage sludge biochar	09:35
Coffee break	09:55
Technology presentations	10:15
Lunch	12:00
Pyrolysis	13:00
Pyrolysis – pilot- and full-scale	13:40
Coffee break	15:00
Biochar characteristics	15:30
Networking session I	17:05
End of day 1	18:00

October 12

Other biochar applications	08:25
Coffee break	10:05
Market	10:20
Lunch	12:00
System analysis	13:00
Panel discussion	14:00
Conclusions	14:45
Networking session II	15:00
End of day 2	16:00

October 13

Study visit Fårevejle WWTP	08:30
End of study visit	16:30

DETAILED PROGRAMME

October 11

Registration **08:30**

Introduction **09:00**

Welcome
Henrik Aspegren, CEO, Sweden Water Research, Sweden

Testbed Ellinge
David Gustavsson, VA SYD and Sweden Water Research, Sweden

General about sewage sludge biochar **09:35**

Sewage sludge biochar – challenges and opportunities
Ondřej Mašek, University of Edinburgh, Great Britain

Coffee break **09:55**

Technology presentations **10:15**

AquaGreen
Henning Schmidt- Petersen, Denmark

EkoBalans
Gunnar Thelin, Sweden

Pyreg
Marcel Rensmann, Germany

Scanship
Pål Jahre Nilsen

WAI Environmental Solutions
Steinar Danielsen, Norway

Beston Group
TBC

Lunch **12:00**

Pyrolysis **13:00**

Pyrolysis of municipal sewage sludge - analysis of the biochar chemistry and heavy metal mobilisation
Naeimeh Vali, University of Borås, Sweden

System for integration of sludge anaerobic digestion and pyrolysis
Gudny Øyre Flatabø, Scanship/University of South-Eastern Norway, Norway

Pyrolysis – pilot- and full-scale

Operational results from Denmark's first full scale sewage sludge steam drying and pyrolysis plant
Christian Wieth, AquaGreen, Denmark

Helsinki sludge pyrolysis project
Christoph Gareis, HSY, Finland

Pyrolysis opportunities for anaerobically digested sludge
Alex Wilcox Brooke, Asiantaeth Ynni Severn Wye Energy Agency, Great Britain

Pyrolysis of biosolids: a comparison of two different approaches
Maria Dittmann and Elke Sellering, Eliquo Technologies, Germany

Coffee break **15:00**

Biochar characteristics **15:30**

Characterisation of pyrochars derived from sewage sludge: stability and agronomic properties
Ruben Sakrabani, Cranfield University, Great Britain

Acid or base activation of sludge biochars to increase P availability
Clara Sophia Kopp, University of Copenhagen, Denmark

Investigating P speciation in sewage sludge biochars to better understand fertilizer value
Josephine Kooij, University of Southern Denmark, Denmark

Effect of pyrolysis conditions on sludge-char properties and its soil application with regard to legislation of the Czech Republic
Jaroslav Moško, University of Chemistry and Technology, Prague, Czech Republic

Performance of biochars from biosolids in fertilization and their climate impact
Helmut Gerber, Pyreg, Germany

Networking session I **17:05**

End of day 1 **18:00**

October 12

Other sewage sludge applications **08:25**

Production and utilisation of sewage sludge biochar for resource recovery and treatment of contaminants
Nazli Pelin Kocatürk Schumacher, Norwegian University of Life Sciences, Norway

The double win effect of pyrolysing PFAS-contaminated sludge: waste treatment and sorbent production.
Erlend Sørmo, Norges Geotekniske Institutt (NGI), Norway

Sludge derived char, complementary outlet as a heavy metal sorbent
Ida Sylwan, Mälardalen University, Sweden

Application of sewage sludge biochar in wastewater treatment
Christoph Thomsen, Flensburg University of Applied Sciences, Germany

Soil-less cultivation in CompoChar - a sludge biochar substrate
Nadav Ziv, Earth Biochar Ltd, Israel

Coffee break **10:05**

Market **10:20**

Interview: Some perspectives on the future of sludge biochar from the agricultural and food sectors
Claes Johansson, Lantmännen, Sweden

Constructing a market for sewage sludge products
Linus Ekman Burgman, Linköping University, Sweden

EBC-Certification of biochar made from biosolids
Hans-Peter Schmidt & Nikolas Hagemann, Carbon Standards International/Ithaka-Institute

Status and perspectives for biochar from sewage sludge and other input materials in the EU Fertilising Products Regulation 2019/1009 and in certain national regulations
Chris Thornton, European Sustainable Phosphorus Platform

Lunch **12:00**

System analysis **13:00**

Pyrolysis of sewage slurry for negative carbon emissions
Tong Han, KTH Royal Institute of Technology, Sweden

An LCA of sewage sludge management in a Swedish case study: high temperature pyrolysis vs. traditional sludge storage and spreading
Maja Karolina Rydgård, University of Copenhagen, Denmark

LCA of sludge biochar used in agriculture
Lisa Zakrisson, Swedish University of Agricultural Sciences, Sweden

Panel discussion **14:00**

The future for pyrolysis in sewage sludge handling and sludge biochar agricultural application
TBC

Conclusions **14:45**

David Gustavsson, VA SYD and Sweden Water Research, Sweden

Networking session II	**15:00**
End of day 2	**16:00**

October 13

Study visit to Fårevejle Municipal Wastewater Treatment Plant in Denmark where a full-scale sewage sludge drying and pyrolysis plant was installed in 2022.

Bus leaves Malmö Central station	**08:30**
Visit to AquaGreen head office and pilot plant	**10:00**
Lunch on the bus to Fårevejle WWTP	**12:00**
Demonstration of drying and pyrolysis plant at Fårevejle WWTP	**13:00**
Bus leaves Fårevejle WWTP	**14:45**
Bus drops off people at Copenhagen airport	**16:00**
Bus comes back to Malmö Central station	**16:30**