

EUROPEAN BIOSOLIDS & BIORESOURCES

CONFERENCE & EXHIBITION

14-15 November 2023 Manchester, UK / Online



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#BiosolidsConference

DRAFT PROGRAMME

Tuesday 14th November

CONFERENCE OPENING & PLENARY KEYNOTE

Time to recover the nutrients from digestates and increase anaerobic digestion sustainability

Ana Soares, Professor of Biotechnology Engineering, Lead of the Resource Recovery Community, Cranfield Water Science Institute, Cranfield University, UK

PROCESS EMISSIONS AND THE JOURNEY TO NET ZERO	CIRCULAR ECONOMY PANEL DISCUSSION	OPTIMISING ANAEROBIC DIGESTORS
Revisiting anaerobic digestion to achieve net zero Piano, E., Arup, UK	Brief presentations followed by an interactive panel discussion with audience Q&A <ul style="list-style-type: none"> • Dr David Tompkins, Associate Director, WSP, UK 	Journey from energy consumer to energy producer - sharing experience from Seafeld wastewater treatment works, UK Hafeez, N. ¹ , Maguire, K. ² , ¹ Veolia, UK, ² Cambi, Norway
Post digestion methane emissions: quantification, mitigation, and appropriate measures Bungay, S. ¹ , Mann, J. ² , Goodwin, T. ² , ¹ Mott MacDonald, UK ² Marches Biogas, UK	<ul style="list-style-type: none"> • Tamsyn Kennedy, Circular Economy Lead, Research & Innovation, Scottish Water • Dr. Yadira Bajón Fernández, Senior Lecturer in Bioresources Science and Engineering, Cranfield University 	Anaerobic digester sludge density investigations at thermal hydrolysis treatment sites in Dwr Cymru Welsh Water Ward, F. ¹ , Parry, I. ¹ , Holthofer, D. ¹ , Mulliner, R. ² , Merry, J. ³ , Bowen, A. ⁴ , ¹ Dwr Cymru Welsh Water, ² AD Ingenuity, ³ Stantec, ⁴ Morgan Sindall, UK

<p>The ammonia stripping treatment to improve biogas production and prevent N₂O emissions from the WWTP biogas plant in Linköping Carraro, G., Smolarczyk, K., Moestedt, J., Verken, T. and Enrich-Prast, A., Linköping University (LIU), Sweden</p>	<ul style="list-style-type: none"> • Chair – Karyn Georges, Managing Director, Isle UK <p>Read more..</p>	<p>Listening to your digester Blacknell, H., Hach, UK</p>
<p>We emit more methane than we report Bajon Fernandez, Y., Hiniduma Gamage, K. and Rivas Casado, M., Cranfield University, UK</p>	<p align="center">CIRCULAR ECONOMY AND THE ROLE FOR NUTRIENT RECOVERY</p>	
<p>Operational experiences and climate benefits from vacuum degassing of digested sludge in Denmark Dittman, M.¹, Willoughby, N.², Pederson, I.³, Knörle, U.¹ and Nielsen, P.H.³, ¹ELIQUO TECHNOLOGIES, Germany, ²ELIQUO HYDROK, UK, ³VandCenter Syd, Denmark</p>	<p>A circular economy solution for resource recovery from anaerobic digestate - an analysis of Nijhuis Saur's GENIUS system Jones, J. and Wolbrink, T., Nijhuis Saur Industries, The Netherlands</p>	<p>Brief presentations followed by an interactive panel discussion with audience Q&A</p> <p>Contributions from:</p> <ul style="list-style-type: none"> • Richard Brindle, Head of Bioresources Strategy, United Utilities • Atkins • CIWEM • EA - tbc
<p>IED Emissions to air – proportionate solutions to mitigation Smith, R. and Gonzalez, C., Jacobs, UK</p>	<p>Nitrogen recovery from digestate and polluted wastewater with advanced ammonium air stripping technologies Jones, J.¹, van den Einjde, T.¹, van den Broek, J.² and Buffinga, G.², ¹Nijhuis Saur Industries, ²Byosis, The Netherlands</p>	
<p>Achieving net zero Prout, J., Assentech, UK</p>	<p>Environmental and economic assessment of biobased fertiliser processes Browne, J., WEW Engineering, UK</p>	
<p>Comparing GHG emissions of post treatment of biosolids utilising BEAM*2022 Le Roux, A., Stantec, UK</p>	<p>Application of an integrated thermo-chemical process to recover phosphorous and bio-coal from municipal sewage sludge Di Bianca, M.¹, Salimbeni, A.^{1,2}, Borch, C.², Rizzo, A.M.^{1,2} and Chiaramonti, D.^{2,3}, ¹RE-CORD, University of Florence, Department of Industrial Engineering, Italy,</p>	<p>The increase in biogas production and other benefits resulting from SLG-F advanced sludge thickening and sludge conditioning prior to anaerobic digestion at Worcester STW Belcher, H.¹, Gibson, M.² and Martin, N.², ¹Severn Trent Water, UK, ²Orege, UK</p>

	² RE-CORD, Scarperia e San Piero, Italy, ³ Polytechnic of Turin, Italy	
The carbon impact of biogas from sewage treatment Barber, B., Cambi, Inc., USA	Sewage sludge conversion into P-rich inorganic fertilizer and biocoal: an industrial scale feasibility study Borchi, C. ¹ , Di Bianca, M. ¹ , Salimbeni, A. ¹ , Rizzo, A.R. ¹ and Chiaramonti, D. ² , ¹ RE-CORD, Scarperia e San Piero, University of Florence, Italy, ² RE-CORD, Scarperia e San Piero, Italy, ² Polytechnic of Turin, Italy	THP cake product drying with non-thermal treatment methods Alexander, Z., Williams, T. and Kraakman, B., Jacobs, UK
INDUSTRIAL EMISSIONS DIRECTIVE PANEL DISCUSSION	Circular economy and biosolid management in an Indian context Blytt, L. ¹ , Kelkar, U. ² , Goel, P. ² and Ahuja, S. ³ , ¹ Norwaste AS, Norway, ² NJS Engineers India Pvt. Ltd., India, ³ Centre for Ganga River Basin Management and Studies, India	Impacts of G-force on dewatering centrifuge capacity and performance Forster, E., Hanson, J.D., and Deighton, J., GEA Westfalia Separator Division, UK
Brief presentations followed by an interactive panel discussion with audience Q&A <ul style="list-style-type: none"> • Clive Humphreys, Senior Advisor, Environment Agency • Anita Manns - Senior Associate - Mott MacDonald Ltd • Paul Fountain, Senior Consultant Biosolids, Thames Water 	Insect bioconversion of sludge Brindle, R., United Utilities, UK	Novel cationic polysaccharide formulations for municipal sludge dewatering Touronen, J., Recktenwald, M., Nikkarinen, J., van Rossum, R., Sluijter, B., Ahlgren, J. and Aubeuf-Prieur, P., Kemira, Finland
		Landbank security - cross sector collaboration Foster, D., Huber Technology, UK

Wednesday 15th November

PLENARY KEYNOTE

Come in number two, your time is up!

Steve Bungay, Technical Director, Wastewater Process Emissions, Mott MacDonald, UK

LANDBANK SECURITY	ADVANCING ANAEROBIC DIGESTION	ADVANCED THERMAL CONVERSION PROCESSES
<p>Incidence and mobility of PFAS in soil from land application sites across the United states Pepper, I., University of Arizona WEST CENTER, USA</p>	<p>Optimising the Heat Balance of HELEA® for CHP and GtG Installations to Deliver the Sustainable Route to Advanced Digestion Lavender, P.¹, and Riches, S.², ¹Royal HaskoningDHV, UK ²Anglian Water, UK</p>	<p>Autothermal pyrolysis as a means of intensification Pedros, P.¹ and Brown, R.², ¹Mott MacDonald, USA, ²Iowa State University, USA</p>
<p>Insights from co-digestion of biosolids pyrolysis liquid and thermally hydrolysed sludge Flatabø, G.Ø.^{1,2}, Svennevik, O.K.¹, Nilsen, P.J.¹, Wien, A.¹ and Bergland, W.H.², ¹Vow ASA, Norway, ²University of South-Eastern Norway</p>	<p>Concept for the reconstruction of the sludge management of the Prague WWTP Srb, M.¹, Sýkora, P.¹, Čech, P.¹, Lánský, M.¹, Rosický, J.², Jeníček, P.³, Hartig, K.⁴, and Jindřich, S.⁴, ¹Pražské vodovody a kanalizace, ²Pražská vodohospodářská společnost, ³University of Chemistry and Technology, 4D-plus, Czech Republic</p>	<p>Operational experience from the world's first fully automated integrated sludge drying and pyrolysis technology Wieth, C., AquaGreen ApS, Denmark</p>
<p>The Biosolids Assurance Scheme – maintaining confidence in biosolids recycling to agricultural land in the UK Taylor, M. and Grieve, D., Assured Biosolids Limited, UK</p>	<p>Eradication of E.coli from operational full-scale anaerobic digestors by thermal treatment using in-situ heat-exchangers Devlin, D., Parry, I., Pick, M., Gerado, M., Dwr Cymru Welsh Water, UK</p>	<p>A route to biochar: technologies, markets and carbon McLeod, A.¹, Kennedy, T.², Pryor, M.¹, Lake, A.¹, Kosova, E.¹ and Barrera Cano, L.¹, ¹Jacobs, UK ²Scottish Water, UK</p>
<p>Optioneering the future: Wessex Water's proactive ATC trial development Stewart, M.¹, Talboys, P.¹, Luqmani, B.¹, Pari, G.¹, Wilson, R.¹, Wong, W.², Cox, K.² and Greenfield, M.², ¹Atkins, UK, ²Wessex Water, UK</p>	<p>Potential use of biosolids-fuelled boilers to meet thermal demands of THP & sludge drying Merry, J., Stantec, UK</p>	<p>Supercritical water oxidation as an effective solution for destruction of sewage sludge Harif, T., Viswanathan, S. and Deshusses, M., 374Water, USA</p>
<p>Unlocking bioresource market growth using a collaborative decision support tool Giacalone, S.¹, Povey, S.¹ and Riches, S.², ¹Business Modelling Associates, UK, ²Anglian Water, UK</p>	<p>Thermal-chemical sludge conditioning, co-digestion, and gas to grid at the Capital Region Water AWTF Auerbach, E.¹, Vergara Romero, L.¹, Rosentel, J.², ¹Arcadis Consulting, UK, ²Capital Region Water, USA</p>	<p>Pyrolysis treatment process towards net zero Casey, E.¹, Surapaneni, A.¹ and Shah, K.², ¹South East Water, UK, ²RMIT University, Australia</p>
<p>Risk management frameworks for biosolids production and reuse: systematic review of developing management practices with industry survey Braine, M., Khan, S. and Kearnes, M., University of New South Wales, Australia</p>	<p>Biogas use: costs vs carbon? Black, J., Atkins, UK</p>	<p>A true biorefinery – can HTL enable full resource recovery from biosolids? Wilson, R., Atkins, UK</p>

<p>Assessment of the available land to recycle biosolids and the impact of possible future restrictions Taylor, M.¹, Grieve, D.¹, and Rollett, A.², ¹Grieve Strategic, UK, ²RSK ADAS, UK</p>	<p>Significant benefits of combining acid digestion and PAD - what if your digesters were the sidestream? Williams, M., Thermal Process Systems, Inc., USA</p>	<p>Bucher press first operation returns for HTC hydrochar dewatering on the two first European and US HTC plants on municipal WWTP Mischler, J-F., Bucher Unipektin AG, Switzerland</p>
<p align="center">ADVANCING ANAEROBIC DIGESTION</p>		
<p>Commercialisation of Tertiary Treated Anaerobically Digested Sewage Sludge at Full Scale – A Case Study Burger, F.¹, Brown, G.² and Panter, P.³, ¹Agriman Pty Ltd, South Africa, ²Dikubu Water Solutions Pty Ltd, South Africa, ³Private consultant, UK</p>	<p>Assessing Ephyra® Plug-flow Digestion to increase energy recovery and minimise downstream methane emissions Lavender, P. and Oliver, B., Royal HaskoningDHV, UK</p>	<p>Carbonisation of biosolids: process design challenges, success factors, and lessons learnt from five projects in Europe and Australia Willoughby, N.¹, Dittmann, M.², O'Brien, L.¹ and Knörle, U.², ¹ELIQUO HYDROK, UK, ²ELIQUO TECHNOLOGIES GmbH</p>
<p>Lessons learned of the commissioning of advanced digesters seeded with hydrolysed digested cake from a faraway site Leclerc, D., Nadarajan, E. and Parker-Dennison, M., MWH Treatment, UK</p>	<p>Enhancing anaerobic digestion with the microbial hydrolysis process Parry, D., Sandino, J., Williams, T., Alexander, Z., Fairley-Wax, M., Jacobs, UK</p>	<p>Advanced Thermal Treatment – a symbiotic relationship with anaerobic digestion to progress to carbon net zero Robinson, G., Bioresen, Uk</p>
<p>New approaches for the optimization of the start-up of full-scale anaerobic digesters Hmaissia, A.¹, Vanneckhaute, C.¹ Bareha, Y.¹, Hernández, E.M.¹, and Boivin, S.², ¹Laval University, Canada, ²Ville de Québec, Canada</p>	<p>Comparative Study of Mesophilic, Thermophilic and Thermal Hydrolysis coupled with Anaerobic Digestion Sahu, A.K.¹, Balasundaram, G.², Gahlot, P.², Tyagi, V.K.³, Kazmi, A.A.², Kleiven, H.¹, ¹Cambi Group AS, Norway, ²Department of Civil Engineering, Indian Institute of Technology, India, ³National Institute of Hydrology, Roorkee, India</p>	<p>Biochar from sludge and biosolids – How to get valuable, safe and approved land applications EBI efforts on regulatory work in EU on urban wastewater, fertilizers and carbon credits Jahre Nilsen, P.^{1,2}, Chiari, D.² and Bier, H.², ¹VOW, Norway, ²European Biochar Industry Consortium (EBI), Germany</p>
<p>CLOSING PLENARY TALK</p>		
<p>Managing uncertainty in AMP8 Richard Brindle, Head of Bioresources Strategy, United Utilities</p>		

POSTERS

Achieving cleaner bioresources: future soil health and circular economy perspectives

Cloy, J. and Kitching, N., Fdra, UK

H2OPE for the future

Sanchez, J., SEM Energy, UK

The ammonia stripping treatment to improve biogas production and prevent N₂O emissions from the WWTP biogas plant in Linköping

Carraro, G., Smolarczyk, K., Moestedt, J., Verken, T. and Enrich-Prast, A., Linköping University (LIU), Sweden

The development of a bio-based fertiliser derived from human urine

Woodward, M., VANDENBERGHUK

Risk management frameworks for biosolids production and reuse: systematic review of developing management practices with industry survey

Braine, M., Khan, S. ad Kearnes, M., University of New South Wales, Australia

Environmental and economic assessment of biobased fertiliser processes

Browne, J., WEW Engineering, UK

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