

# EUROPEAN BIOSOLIDS & BIORESOURCES

## CONFERENCE & EXHIBITION

14-15 November 2023 Manchester, UK / Online



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### DRAFT TIMETABLE

Tuesday 14 <sup>th</sup> November			
<b>CONFERENCE OPENING &amp; PLENARY KEYNOTE</b>			
09:30 – 10:00	<b>Time to recover the nutrients from digestates and increase anaerobic digestion sustainability</b> Ana Soares, Professor of Biotechnology Engineering, Lead of the Resource Recovery Community, Cranfield Water Science Institute, Cranfield University, UK		
	<b>ROOM 1</b>	<b>ROOM 2</b>	<b>ROOM 3</b>
	<b>PROCESS EMISSIONS AND THE JOURNEY TO NET ZERO</b>	<b>CIRCULAR ECONOMY PANEL DISCUSSION</b>	<b>OPTIMISING ANAEROBIC DIGESTORS</b>
10:05 – 10:30	<b>Anaerobic digestion: beyond net zero but within planetary boundaries</b> Piano, E., Arup, UK	Brief presentations followed by an interactive panel discussion with audience Q&A <ul style="list-style-type: none"> <li>• <b>Dr David Tompkins</b>, Associate Director – Water Sector Circular Economy, WSP, UK</li> <li>• <b>Tamsyn Kennedy</b>, Circular Economy Lead, Research &amp; Innovation, Scottish Water</li> <li>• <b>Dr. Yadira Bajón Fernández</b>, Senior Lecturer in Bioresources Science and Engineering, Cranfield University</li> </ul>	<b>Journey from energy consumer to energy producer - sharing experience from Seafeld wastewater treatment works, UK</b> Hafeez, N. <sup>1</sup> , Maguire, K. <sup>2</sup> , <sup>1</sup> Veolia, UK, <sup>2</sup> Cambi, Norway
10:30 – 10:55	<b>The ammonia stripping treatment to improve biogas production and prevent N20 emissions from the WWTP biogas plant in Linköping</b> Carraro, G., Smolarczyk, K., Moestedt, J., Verken, T. and Enrich-Prast, A., Linköping University (LIU), Sweden		<b>Anaerobic digester sludge density investigations at thermal hydrolysis treatment sites in Dwr Cymru Welsh Water</b> Ward, F. <sup>1</sup> , Parry, I. <sup>1</sup> , Holthofer, D. <sup>1</sup> , Mulliner, R. <sup>2</sup> , Merry, J. <sup>3</sup> , Bowen, A. <sup>4</sup> , <sup>1</sup> Dwr Cymru Welsh Water, <sup>2</sup> AD Ingenuity, <sup>3</sup> Stantec, <sup>4</sup> Morgan Sindall, UK

10:55 – 11:20	<b>Operational experiences and climate benefits from vacuum degassing of digested sludge in Denmark</b> Dittmann, M. <sup>1</sup> , Willoughby, N. <sup>2</sup> , Pedersen, I. <sup>3</sup> , Knörle, U. <sup>1</sup> and Nielsen, P.H. <sup>3</sup> , <sup>1</sup> ELIQUO TECHNOLOGIES, Germany, <sup>2</sup> ELIQUO HYDROK, UK, <sup>3</sup> VandCenter Syd, Denmark	<ul style="list-style-type: none"> <li>• <b>Chair – Karyn Georges</b>, Managing Director, Isle UK</li> </ul> <a href="#">Session insights</a>	<b>Listening to your digester</b> Blacknell, H., Hach, UK
11:20 – 11:50	<b>Morning break and exhibition</b>		
	<b>ROOM 1</b>	<b>ROOM 2</b>	<b>ROOM 3</b>
	<b>PROCESS EMISSIONS AND THE JOURNEY TO NET ZERO</b>	<b>CIRCULAR ECONOMY AND THE ROLE FOR NUTRIENT RECOVERY</b>	<b>BIORESOURCES STRATEGY PANEL DISCUSSION</b>
11:50 – 12:15	<b>IED Emissions to air – proportionate solutions to mitigation</b> Smith, R. and Gonzalez, C., Jacobs, UK	<b>H2OPE For The Future</b> Cassidy, L., SEM Energy, UK	<b>Presentations from:</b> <ul style="list-style-type: none"> <li>• <b>Richard Brindle</b>, Head of Bioresources Strategy, United Utilities</li> <li>• <b>Sarah-Jane Westlake</b>, Associate Director of Bioresources, AtkinsRéalis</li> </ul> <b>Interactive Panel discussion with:</b> <ul style="list-style-type: none"> <li>• <b>Richard Lancaster</b>, Global Director of Bioresources, AtkinsRéalis</li> <li>• <b>Lucinda Gilfoyle</b>, Head of Environmental Strategy, Water UK</li> <li>• <b>Helen Wakeham</b>, Director of Water Transformation, Environment Agency</li> <li>• <b>Paul Shaffer</b>, Director of Innovation and Delivery at CIWEM</li> <li>• <b>Session Chair: Esme Piechoczek</b>, Bioresources Consultant, AtkinsRéalis</li> </ul> <a href="#">Session insights</a>
12:15 – 12:40	<b>Achieving net zero</b> Prout, J. and Cox, E., Assentech, UK	<b>A circular economy solution for resource recovery from anaerobic digestate - an analysis of Nijhuis Saur's GENIUS system</b> Jones, J. and Wolbrink, T., Nijhuis Saur Industries, The Netherlands	
12:40 – 13:05	<b>Comparing GHG emissions of post treatment of biosolids utilising BEAM*2022</b> Le Roux, A., Stantec, UK	<b>Nitrogen recovery from digestate and polluted wastewater with advanced ammonium air stripping technologies</b> Jones, J. <sup>1</sup> , van den Einjde, T. <sup>1</sup> , van den Broek, J. <sup>2</sup> and Buffinga, G. <sup>2</sup> , <sup>1</sup> Nijhuis Saur Industries, <sup>2</sup> Byosis, The Netherlands	
13:05 – 14:00	<b>Lunch and exhibition</b>		
	<b>PROCESS EMISSIONS AND THE JOURNEY TO NET ZERO</b>	<b>CIRCULAR ECONOMY AND THE ROLE FOR NUTRIENT RECOVERY</b>	<b>THICKENING, DEWATERING &amp; NET ZERO</b>
14:00 – 14:25	<b>The carbon impact of biogas from sewage treatment</b> Barber, B., Cambi, Inc., USA	<b>Environmental and economic assessment of biobased fertiliser processes</b> Browne, J., WEW Engineering, UK	<b>The role of biosolids product and process energy use of water content, based on market externalities</b> Panter, K., Consultant, UK

14:25 – 14:50	<b>Post digestion methane emissions: quantification, mitigation, and appropriate measures</b> Bungay, S. <sup>1</sup> , Mann, J. <sup>2</sup> , Goodwin, T. <sup>2</sup> , <sup>1</sup> Mott MacDonald, UK <sup>2</sup> Marches Biogas, UK	<b>Application of an integrated thermo-chemical process to recover phosphorous and bio-coal from municipal sewage sludge</b> Di Bianca, M. <sup>1</sup> , Salimbeni, A. <sup>1,2</sup> , Borchì, C. <sup>2</sup> , Rizzo, A.M. <sup>1,2</sup> and Chiaramonti, D. <sup>2,3</sup> , <sup>1</sup> RE-CORD, University of Florence, Department of Industrial Engineering, Italy, <sup>2</sup> RE-CORD, Scarperia e San Piero, Italy, <sup>3</sup> Polytechnic of Turin, Italy	<b>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</b> Belcher, H. <sup>1</sup> , Gibson, M. <sup>2</sup> and Martin, N. <sup>2</sup> , <sup>1</sup> Severn Trent Water, UK, <sup>2</sup> Orege, UK
14:50 – 15:15	<b>We emit more methane than we report</b> Bajon Fernandez, Y., Hiniduma Gamage, K. and Rivas Casado, M., Cranfield University, UK	<b>Sewage sludge conversion into P-rich inorganic fertilizer and biocoal: an industrial scale feasibility study</b> Borchì, C. <sup>1</sup> , Di Bianca, M. <sup>1</sup> , Salimbeni, A. <sup>1</sup> , Rizzo, A.R. <sup>1</sup> and Chiaramonti, D. <sup>2</sup> , <sup>1</sup> RE-CORD, Scarperia e San Piero, University of Florence, Italy, <sup>2</sup> RE-CORD, Scarperia e San Piero, Italy, <sup>2</sup> Polytechnic of Turin, Italy	<b>THP cake product drying with non-thermal treatment methods</b> Alexander, Z., <sup>1</sup> Williams, T., <sup>1</sup> Kraakman, B. <sup>1</sup> and Devlin, D. <sup>2</sup> , <sup>1</sup> Jacobs, UK, <sup>2</sup> Dŵr Cymru, UK
15:15 – 15:45	<b>Afternoon break and exhibition</b>		
	<b>ROOM 1</b>	<b>ROOM 2</b>	<b>ROOM 3</b>
	<b>INDUSTRIAL EMISSIONS DIRECTIVE PANEL DISCUSSION</b>	<b>CIRCULAR ECONOMY AND THE ROLE FOR NUTRIENT RECOVERY</b>	<b>THICKENING, DEWATERING &amp; NET ZERO</b>
15:45 – 16:10	Brief presentations followed by an interactive panel discussion with audience Q&A <ul style="list-style-type: none"> <li>• <b>Clive Humphreys</b>, Senior Advisor, Environment Agency</li> <li>• <b>Anita Manns</b>, Senior Associate, Mott MacDonald Ltd</li> </ul>	<b>Circular economy and biosolids management in an Indian context</b> Blytt, L. <sup>1</sup> , Kelkar, U. <sup>2</sup> , Goel, P. <sup>2</sup> and Ahuja, S. <sup>3</sup> , <sup>1</sup> Norwaste AS, Norway, <sup>2</sup> NJS Engineers India Pvt. Ltd., India, <sup>3</sup> Centre for Ganga River Basin Management and Studies, India	<b>Impacts of G-force on dewatering centrifuge capacity and performance</b> Forster, E., Hanson, J.D., and Deighton, J., GEA Westfalia Separator Division, UK
16:10 – 16.35	<ul style="list-style-type: none"> <li>• <b>Paul Fountain</b>, Senior Consultant Biosolids, Thames Water</li> <li>• <b>Steve Bungay</b>, Technical Director - Wastewater Process Emissions, Mott MacDonald Ltd</li> <li>• <b>Chair – Yadira Bajon-Fernandez</b>, Senior Lecturer in Bioresources Science and Engineering, Cranfield University</li> </ul>	<b>Insect bioconversion of sludge</b> Brindle, R., United Utilities, UK	<b>Novel cationic polysaccharide formulations for municipal sludge dewatering</b> Morris, P., Touronen, J., Recktenwald, M., Nikkarinen, J., van Rossum, R., Sluijter, B., Ahlgren, J. and Aubeuf-Prieur, P., Kemira, Finland
16:35 – 17:00	<a href="#">Session insights</a>		<b>Landbank security - cross sector collaboration</b> Foster, D., Huber Technology, UK
17:00 – 17:45	<b>Networking drinks reception – exhibition hall</b>		
17:00 – 17:45	<b>Bioresources young professionals’ networking event – mezzanine area</b>		

Wednesday 15 <sup>th</sup> November			
	ROOM 1	ROOM 2	ROOM 3
	LANDBANK SECURITY	ADVANCING ANAEROBIC DIGESTION	ADVANCED THERMAL CONVERSION PROCESSES
09:05 – 09:30	<b>Incidence and mobility of PFAS in soil from land application sites across the United states</b> Pepper, I., University of Arizona WEST CENTER, USA	<b>Optimising the heat balance of HELEA® for CHP and GtG installations to deliver the sustainable route to advanced digestion</b> Lavender, P. <sup>1</sup> , and Riches, S. <sup>2</sup> , <sup>1</sup> Royal HaskoningDHV, UK <sup>2</sup> Anglian Water, UK	<b>Autothermal pyrolysis as a means of intensification</b> Pedros, P. <sup>1</sup> and Brown, R. <sup>2</sup> , <sup>1</sup> Mott MacDonald, USA, <sup>2</sup> Iowa State University, USA
09:30 – 09:55	<b>Insights from co-digestion of biosolids pyrolysis liquid and thermally hydrolysed sludge</b> Flatabø, G.Ø. <sup>1,2</sup> , Svennevik, O.K. <sup>1</sup> , Nilsen, P.J. <sup>1</sup> , Wien, A. <sup>1</sup> and Bergland, W.H. <sup>2</sup> , <sup>1</sup> Vow ASA, Norway, <sup>2</sup> University of South-Eastern Norway	<b>Concept for the reconstruction of the sludge management of the Prague WWTP</b> Srb, M. <sup>1</sup> , Sýkora, P. <sup>1</sup> , Čech, P. <sup>1</sup> , Lánský, M. <sup>1</sup> , Rosický, J. <sup>2</sup> , Jeníček, P. <sup>3</sup> , Hartig, K. <sup>4</sup> , and Jindřich, S. <sup>5</sup> , <sup>1</sup> Pražské vodovody a kanalizace, <sup>2</sup> Pražská vodohospodářská společnost, <sup>3</sup> University of Chemistry and Technology Prague, <sup>4</sup> Sweco a.s., <sup>5</sup> D-plus, Czech Republic	<b>Operational experience from the world's first fully automated integrated sludge drying and pyrolysis technology</b> Wieth, C., AquaGreen ApS, Denmark
09:55 – 10:20	<b>The Biosolids Assurance Scheme – maintaining confidence in biosolids recycling to agricultural land in the UK</b> Taylor, M. and Grieve, D., Assured Biosolids Limited, UK	<b>Eradication of E.coli from operational full-scale anaerobic digestors by thermal treatment using in-situ heat-exchangers</b> Devlin, D., Parry, I., Pick, M., Gerado, M., Dwr Cymru Welsh Water, UK	<b>A route to biochar: technologies, markets and carbon</b> McLeod, A. <sup>1</sup> , Kennedy, T. <sup>2</sup> , Pryor, M. <sup>1</sup> , Lake, A. <sup>1</sup> , Kosova, E. <sup>1</sup> and Barrera Cano, L. <sup>1</sup> , <sup>1</sup> Jacobs, UK <sup>2</sup> Scottish Water, UK
10:20 – 10:45	<b>Optioneering the future: Wessex Water's proactive ATC trial development</b> Stewart, M. <sup>1</sup> , Talboys, P. <sup>1</sup> , Luqmani, B. <sup>1</sup> , Pari, G. <sup>1</sup> , Wilson, R. <sup>1</sup> , Wong, W. <sup>2</sup> , Cox, K. <sup>2</sup> and Greenfield, M. <sup>2</sup> , <sup>1</sup> AtkinsRéalis, UK, <sup>2</sup> Wessex Water, UK	<b>Potential use of biosolids-fuelled boilers to meet thermal demands of THP &amp; sludge drying</b> Merry, J., Stantec, UK	<b>Supercritical water oxidation as an effective solution for destruction of sewage sludge</b> Harif, T., Viswanathan, S. and Deshusses, M., 374Water, USA
10:45 – 11:15	<b>Morning break and exhibition</b>		
	LANDBANK SECURITY	ADVANCING ANAEROBIC DIGESTION	ADVANCED THERMAL CONVERSION PROCESSES
11:15 – 11.40	<b>Unlocking bioresource market growth using a collaborative decision support tool</b> Giacalone, S. <sup>1</sup> , Povey, S. <sup>1</sup> and Riches, S. <sup>2</sup> , <sup>1</sup> BMA (Business Modelling Applications), UK, <sup>2</sup> Anglian Water, UK	<b>Thermal-chemical sludge conditioning, co-digestion, and gas to grid at the Capital Region Water AWTF</b> Auerbach, E., <sup>1</sup> Vergara Romero, L. <sup>1</sup> , Rosentel, J. <sup>2</sup> , <sup>1</sup> Arcadis Consulting, UK, <sup>2</sup> Capital Region Water, USA	<b>A true biorefinery – can HTL enable full resource recovery from biosolids?</b> Wilson, R., AtkinsRéalis, UK

11:40 – 12:05	<b>Risk management frameworks for biosolids production and reuse: systematic review of developing management practices with industry survey</b> Braine, M., Khan, S. and Kearnes, M., University of New South Wales, Australia	<b>Biogas use: costs vs carbon?</b> Black, J., AtkinsRéalis, UK	<b>Bucher press first operation returns for HTC hydrochar dewatering on the two first European and US HTC plants on municipal WWTP</b> Mischler, J-F., Bucher Unipektin AG, Switzerland
12:05 – 12:30	<b>Assessment of the available land to recycle biosolids and the impact of possible future restrictions</b> Taylor, M. <sup>1</sup> , Grieve, D. <sup>1</sup> , and Rollett, A. <sup>2</sup> , <sup>1</sup> Grieve Strategic, UK, <sup>2</sup> RSK ADAS, UK	<b>Significant benefits of combining acid digestion and PAD - what if your digesters were the sidestream?</b> Williams, M., Thermal Process Systems, Inc., USA	<b>Carbonisation of biosolids: process design challenges, success factors, and lessons learnt from five projects in Europe and Australia</b> Willoughby, N. <sup>1</sup> , Dittmann, M. <sup>2</sup> , O'Brien, L. <sup>1</sup> and Knörle, U. <sup>2</sup> , <sup>1</sup> ELIQUO HYDROK, UK, <sup>2</sup> ELIQUO TECHNOLOGIES GmbH
12:30 – 13:30	<b>Lunch and exhibition</b>		
<b>PLENARY KEYNOTE &amp; POSTER AWARD PRESENTATION</b>			
13:30 – 14:00	<b>Come in number two, your time is up!</b> Steve Bungay, Technical Director, Wastewater Process Emissions, Mott MacDonald, UK		
	<b>ADVANCING ANAEROBIC DIGESTION</b>	<b>ADVANCING ANAEROBIC DIGESTION</b>	<b>ADVANCED THERMAL CONVERSION PROCESSES</b>
14:05 – 14:30	<b>Commercialisation of Tertiary Treated Anaerobically Digested Sewage Sludge at Full Scale – A Case Study</b> Burger, F. <sup>1</sup> , Brown, G. <sup>2</sup> and Panter, P. <sup>3</sup> , <sup>1</sup> Agrim Pty Ltd, South Africa, <sup>2</sup> Dikubu Water Solutions Pty Ltd, South Africa, <sup>3</sup> Private consultant, UK	<b>Assessing Ephyra® Plug-flow Digestion to increase energy recovery and minimise downstream methane emissions</b> Lavender, P. and Oliver, B., Royal HaskoningDHV, UK	<b>Advanced Thermal Treatment – a symbiotic relationship with anaerobic digestion to progress to carbon net zero</b> Robinson, G., Bioresen, UK
14:30 – 14.55	<b>Lessons learned of the commissioning of advanced digesters seeded with hydrolysed digested cake from a faraway site</b> Leclerc, D., Nadarajan, E. and Parker-Dennison, M., MWH Treatment, UK	<b>Enhancing anaerobic digestion with the microbial hydrolysis process</b> Parry, D., Sandino, J., Williams, T., Alexander, Z., Fairley-Wax, M., Jacobs, UK	<b>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</b> Jahre Nilsen, P. <sup>1,2</sup> , Chiari, D. <sup>2</sup> and Bier, H. <sup>2</sup> , <sup>1</sup> VOW, Norway, <sup>2</sup> European Biochar Industry Consortium (EBI), Germany
14:55 – 15:20	<b>New approaches for the optimization of the start-up of full-scale anaerobic digesters</b> Hmaissia, A. <sup>1</sup> , Vanneckhaute, C. <sup>1</sup> Bareha, Y. <sup>1</sup> , Hernández, E.M. <sup>1</sup> , and Boivin, S. <sup>2</sup> , <sup>1</sup> Laval University, Canada, <sup>2</sup> Ville de Québec, Canada	<b>Comparative Study of Mesophilic, Thermophilic and Thermal Hydrolysis coupled with Anaerobic Digestion</b> Sahu, A.K. <sup>1</sup> , Balasundaram, G. <sup>2</sup> , Gahlot, P. <sup>2</sup> , Tyagi, V.K. <sup>3</sup> , Kazmi, A.A. <sup>2</sup> , Kleiven, H. <sup>1</sup> , <sup>1</sup> Cambi Group AS,	

		Norway, <sup>2</sup> Department of Civil Engineering, Indian Institute of Technology, India, <sup>3</sup> National Institute of Hydrology, Roorkee, India	
<b>CLOSING PLENARY TALK</b>			
15:20 – 15:35	<b>Managing uncertainty in AMP8</b> Richard Brindle, Head of Bioresources Strategy, United Utilities		
15:35 – 15:45	<b>Grab and go drinks</b>		

<b>POSTERS</b>	
<b>Achieving cleaner bioresources: future soil health and circular economy perspectives</b> Cloy, J. and Kitching, N., Fidra, UK	
<b>H2OPE for the future</b> Sanchez, J., SEM Energy, UK	
<b>The ammonia stripping treatment to improve biogas production and prevent N2O emissions from the WWTP biogas plant in Linköping</b> Carraro, G., Smolarczyk, K., Moestedt, J., Verken, T. and Enrich-Prast, A., Linköping University (LIU), Sweden	
<b>The development of a bio-based fertiliser derived from human urine</b> Woodward, M., VANDENBERGHUK	
<b>Risk management frameworks for biosolids production and reuse: systematic review of developing management practices with industry survey</b> Braine, M., Khan, S. and Kearnes, M., University of New South Wales, Australia	
<b>Environmental and economic assessment of biobased fertiliser processes</b> Browne, J., WEW Engineering, UK	
<b>In-situ biomethanation in high-rate anaerobic wastewater treatment</b> Nguyen, P.Y., Ferreira, A.L.M., Pacheco-Ruiz, S., and Lens, P.N.L., University of Galway, Ireland	
<b>Enhancing anaerobic digestion by simultaneous application of a combined treatment of nano-zero valent iron and magnetite nanoparticles</b> Hoffmann Casas, N., Universidad de La Frontera, Chile	

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