

EUROPEAN BIOSOLIDS & ORGANIC RESOURCES CONFERENCE



15-16 November 2016

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TUESDAY 15 NOVEMBER

TINTO SUITE

PLENARY

Chair . Martin Jolly, Aqua Enviro

9.30 – 10.00

Upgrading Scottish Water's National Sludge Strategy

Smith, M.¹, Murray, K.¹, Fox, R.² and Reid, G.², ¹m², ²Scottish Water, UK

10.00 – 10.10

Brian Chambers Soil Fund

Sinclair, A., SAC Consulting, UK

ANAEROBIC DIGESTION

Chair . Keith Panter, Ebcor

10.15 – 10.45

Mixing optimization of gas-mixed anaerobic digestion using CFD

Dapelo, D. and Bridgeman, J., University of Birmingham, UK

10.45 – 11.15

TOC measurement for the control of anaerobic digesters

Butterfield, M., HACH, UK

11.15 – 11.45

Coffee Break

11.45 – 12.15

Optimising the performance and stability of conventional mesophilic anaerobic digestion of sewage sludge

Giacalone, S.^{1,2}, Winter, P.¹ and Smith S.R.², ¹Thames Water Utilities, UK, ²Imperial College London, UK

12.15 – 12.45

Optimising the energy yield from anaerobic digestion through calorific value analysis: Case studies from Davyhulme and Seafield

Smyth, M.¹, Minall, R.¹, Stead, T.² and Walker, J.³, Aqua Enviro, United Utilities, Veolia, UK

12.45 - 13.45	Lunch
Chair – Professor Céline Vaneekhaute, Université Laval	
13.45 – 14.15	Upgrading of Egg-shaped Digesters of Xiaohongmen WWTP to one of the first Cambi Advanced Anaerobic Digestion projects in Beijing—Design, Construction and Commissioning Liao, Z. ¹ , Chen, Y. ² , Huang, O. ³ and Wen, Y. ⁴ , ¹ Cambi Group AS, ² Beijing Drainage Construction Company Ltd, China, ³ Beijing Municipal Engineering Design Institute, China, ⁴ Purac Environmental Technology (Beijing) Company, China
14.15 – 14.45	Comparison of the performance of anaerobic digestion of thermally hydrolysed sludge during thermophilic and mesophilic anaerobic digestion Shana. A. ¹ , Perez, E.R. ¹ , Perrault, A. ¹ , Mills, N. ¹ , Fountain, P. ¹ , Asaadi, M. ² , Gauchard, N. ² and Tilahun, D. ¹ , ¹ Thames Water Utilities, UK, ² AD Technologies Ltd, UK
14.45 – 15.15	A predictive model to determine ammonium levels in digestate liquors Smyth, M. ¹ , Brookes, A. ² and Riches, S. ² , ¹ Aqua Enviro, UK, ² Anglian Water, UK
15.15 – 15.45	Coffee Break
15.45 – 16.15	The influence of micro dosage of calcium nitrate on anaerobic digestion Franke, W. ¹ , Doppelbauer, G. ² , Ettl, M. ² , Reid, A. ³ and Stoeck, T. ⁴ , ¹ Yara Industrial ASA, Norway, ² Yara Industrial GmbH, Germany, ³ Yara, UK, ⁴ Technische Universität Kaiserslautern, Germany
16.15 – 16.45	Why isn't my plant running at 100%? Clutten, T., Huber, UK
MOORFOOT SUITE	
THICKENING AND DEWATERING	
Chair . Bruno Bigot, Veolia Water Technologies	
10.15 – 10.45	Achieving optimum flocculation using the FLOMIX higher energy mixer. Barnett, J., SNF (UK) LTD, UK
10.45 – 11.15	Predicting and measuring sludge dewaterability: A mass balance approach Smyth, M. and Minall, R. Aqua Enviro, UK
11.15 – 11.45	Coffee Break & Exhibition
11.45 – 12.15	The evolution of the Huber screw press Sims, J., Huber, UK
12.15 – 12.45	Flocformer: an innovative solution for improving dewatering. Results of a UK trial and other success stories Lucy, M. ¹ and Schroeder, C. ² , ¹ Suez Advanced Solutions UK Ltd, UK, ² Aquen
12.45 – 13.45	Lunch

Chair . Michael Froom, Veolia Water Technologies	
13.45 – 14.15	The role of soluble P and ESP on dewatering performance Rus, E., Thames Water Utilities, UK
14.15 – 14.45	Highly efficient Bucher HPS 12007 dewatering technology prior to incineration to achieve a positive energy balance in sludge treatment Mischler, J.F., Pinnow, D. and Huppert, M., Bucher Unipecktin AG., Switzerland
14.45 – 15.15	Low energy sludge pretreatment for thermal hydrolysis using the Volute discpress Cooper-Smith, G., Evergreen Water Solutions Ltd, Ireland
15.15 – 15.45	Coffee Break
15.45 – 16.15	Advantages of automatic pond depth adjustment with GEA thickening and (pre-) dewatering centrifuges Hanson, J., Condon, P., Vliegen, J. and Janssen, C., GEA Separation, UK
16.15 – 16.45	Controlled sludge stream: A smart way to optimise your assets Masse, A.L., Thames Water Utilities, UK
<u>KILSYTH SUITE</u>	
<u>CHANGES IN BIOSOLIDS REGULATION</u>	
Chair . Alan Whipps, Pell Frischmann	
10.15 – 10.45	Biosolids Assurance Scheme – maintaining confidence in biosolids recycling to agricultural land in the UK Black, S., Grieve, D., Llewellyn, A., Assured Biosolids Ltd, UK
10.45 – 11.15	The Scottish Sludge Review (Review of storage and spreading of sewage sludge on land in Scotland) Berry, M., Scottish Government, UK
11.15 – 11.45	Coffee Break
11.45 – 12.15	Why quality/perception matter Speaker TBC
12.15 – 12.45	Regulations and HACCP Taylor, M., Aqua Enviro, UK
12.45 – 13.45	Lunch
<u>BIOSOLIDS & RECYCLING</u>	
Chair – Andy Thornton, Hach	
13.45 – 14.15	Investigations into potential risks associated with the use of treated municipal sludge on agricultural land. Healy, M.G. ¹ , Fenton, O. ² , Cummins, E. ³ , Clarke, R. ³ , Peyton, D.P. ^{1,2} , Fleming, G.T.A. ¹ , Wall, D. ² , Morrison, L. ¹ , Cormican, M. ¹ , ¹ National University of Ireland, Ireland, ² Teagasc, Environment Research Centre, Ireland, ³ University College Dublin, Ireland
14.15 – 14.45	WEST: A new resource for wastewater treatment and biosolids research Pepper, I., The University of Arizona, USA
14.45 – 15.15	Natural Covers: Is it a viable solution to manage Biosolids temporary stockpiles? Rajapaksha, N.S.S., Gedara, S.G., Harry, M. and Carl, S., United Utilities, UK
15.15 – 15.45	Coffee Break

QUALITY OF ORGANIC MATERIALS

Chair . Alex Sinclair, SAC Consulting

15.45 – 16.15 **The importance of quality: a regulator’s perspective**

Donaldson, F., SEPA, UK

16.15 – 16.45 **Quality from the food chain perspective**

Bauer, A., NFU Scotland, UK

16.45 – 17.15 **The importance of quality**

Tompkins, D., Aqua Enviro, UK

WEDNESDAY 16 NOVEMBER

TINTO SUITE

THERMAL HYDROLYSIS

Chair . Lindsey Gove, Anglian Water

9.00 – 9.30 **Sludge hydrolysis: comparing performance of biological and thermal advanced anaerobic digestion full scale facilities**

Harrison, D.¹, Keutgen, H.¹, Theodoulou, M.², ¹GE Water & Technologies, UK, ²GE Water & Process Technologies, Canada

9.30 – 10.00 **The next generation of continuous THP**

van de Ven, M., Hol, A., Luning, L., and Taskel, D., Sustec B.V., Netherlands

10.00 – 10.30 **Development and assessment of a model for Cambi’s solid stream process using “SUMO” WWTP simulation software**

Kolovos, A.¹, Kjorlang, O.² and Nilsen, P.J.², ¹TU Berlin, Germany, ²Cambi Group AS, Norway

10.30 – 11.00 **Energy optimization of thermal hydrolysis processes to ensure energy self-sufficiency**

Fernández-Polanco, D. and Fernández-Polanco, F., Tech4plus, Spain

11.00 – 11.30 **Coffee Break**

11.30 – 12.00 **Thermal hydrolysis offerings in north america and full scale system performance**

Williams, T.¹ and Burrowes, P.², ¹CH2M, USA, ²CH2M, Canada

12.00 – 12.30 **Small scale THP – Exploring future more sustainable sludge strategies**

Rus, E., Thames Water Utilities, UK

12.30 – 13.00 **Lessons learnt and performance of Crawley sludge centre upgrade using new compact B6 THP system**

Panter, K.¹, Fountain, P.² and Ringoot, D.³, ¹Ebcor Ltd, UK, ²Thames Water Utilities, UK, ³Cambi, Norway

13.00 – 14.00 **Lunch**

OPTIMISING BIOGAS USE

14.00 – 14.30 **An STW - biogas & compliance study - mass balance & gap analysis**

Williams, R., Barnes, C., Kalaurachchi, M., Poole, A., Clare, I. and Green, P., MWH, UK

14.30 - 15.00	Integrated biogas utilisation strategy at Davyhulme WwTW Edgington, R.M. ¹ , Horne, P. ¹ , Tena, S. ² and Richards, S. ² , ¹ United Utilities, ² Jacobs, UK
15.00 - 15.30	Modification of UK municipal activated sludge plants to incorporate onsite sludge digestion Bassey, B.O. ¹ , Odigie, O.P. ¹ , Ajare, T.O. ¹ , and Oloruntoba, F.M. ² , ¹ Coventry University, UK, ² University of Port Harcourt, Nigeria
MOORFOOT SUITE	
ENERGY AND NUTRIENT RECOVERY Chair . Lynne Bouchy, Suez Advanced Solutions UK	
9.30 – 10.00	A comparison of different sewage sludges used in microbial fuel cells for energy generation Omeroglu, S. and Sanin, F.D., Middle East Technical University, Turkey
10.00 – 10.30	Struvite recovery using a competitive solution: results from a full scale unit in the Netherlands. Kroyer, P., Suez, Netherlands
10.30 – 11.00	Phosphorus removal and fertiliser potential biosolids biochar Shepherd, J., Buss, W., Sohi, S., Heal, K. and Lewis, S., University of Edinburgh, Scotland
11.00 – 11.30	Coffee Break
11.30 – 12.00	Billund Biorefinery – advancing the recycle circle Gilbert, A., Veolia Water Technologies, UK
12.00 – 12.30	WWTP Amersfoort (NL): conversion into an energy and nutrient factory – commissioning and performance Parnowska, M. ¹ and Geraats, B. ² , ¹ Eliquo Water-Energy, UK., ² Eliquo Water-Energy, Netherlands
12.30 – 13.00	Biochemical Methane Potential (BMP) Testing of organic wastes Burgess, A. and Smyth, M., Aqua Enviro, UK
13.00 – 14.00	Lunch
14.00 – 14.30	Sludge drying and pyrolysis: a relevant duo for energy recovery Arauzo, I ¹ , Lee, C. ² , Lucy, M. ³ , Bouchy, L. ³ , Thomas, M.C ² , ¹ Suez, Spain, ² EPI, ³ Suez Advanced Solutions UK, UK
14.30 – 15.00	Optimization of nutrient recovery treatment trains using a new Nutrient Recovery Model (NRM) library Vaneekhaute, C. ¹ , Belia E. ² , Meers, E. ³ , Tack F.M.G. ³ , Vanrolleghem, P.A. ⁴ , ¹ Bioengine, Université Laval, Canada, ² Primodal inc. Canada, ³ Ecochem, Ghent University, Belgium, ⁴ ModelEAU, Université Laval, Canada
IMPROVING REGULATION OF ORGANIC WASTES POST BREXIT – Panel Discussion Chair . David Tompkins, Bioresources Development Manager, Aqua Enviro	
11.30 – 13.00	<ul style="list-style-type: none"> • Clive Humphreys, Senior Advisor . Environment and Business, Environment Agency • Esther Kiddle, TK Associates

	<ul style="list-style-type: none">• Jenny Grant, Organics Recycling Group Manager . Scotland, REA• Alex Llewellyn, Assured Biosolids Ltd, UK
13.00 – 14.00	Lunch
<u>R&D NEEDS OF THE WATER INDUSTRY - WORKSHOP</u> Chair . Matthew Hindle, Head of Policy, ADBA	
14.00 – 15.30	<ul style="list-style-type: none">• Dr. Angela Bywater, Manager, Anaerobic Digestion Network• Edgar Blanco, Managing Director, Anaero Technology Ltd• Ester Rus, Sludge and Energy Manager, Thames Water• Gordon Reid, Wastewater Service Strategy Manager, Scottish Water

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