THE WEXGlobal Bioeconomy SUMMIT

From Organic Waste Streams to Circular Value Systems

2nd-4th November 2026 in Lisbon, Portugal

Working Agenda

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Summit Overview

The WEX Global Bioeconomy Summit (**WEX-BIO**) is a global meeting point for the bioresources economy, exploring how organic waste streams, including biosolids, food waste, industrial by-products and agricultural residues can be transformed into valuable resources that fuel the circular, low-carbon economy.

At the heart of this transition is the water and wastewater sector, evolving into a critical platform for capturing, processing and unlocking value from these resource flows through the development of urban bio-refineries. By converting waste into energy, nutrients, bio-based materials and reclaimed water they are becoming engines of a new circular industrial system connecting cities to farms, utilities to energy systems and waste producers to emerging markets for bio-based products.

However, despite rapid progress the transition remains uneven. Regulatory frameworks differ widely between regions, many innovations struggle to scale beyond pilot projects and collaboration between utilities, cities, industry, agriculture and investors is still developing.

WEX-BIO will bring together leaders from across water, agriculture, energy, industry and finance to create a catalytic community focused on the partnerships, technologies and market frameworks needed to accelerate the shift from waste management to resource optimisation and to position water and wastewater infrastructure at the centre of a resilient, digitally enabled and globally scalable bioeconomy.

Key Speakers include:

- **H.E. João Manuel Esteves**, Secretary of State for Environment, Ministry of Environment and Energy, Government of Portugal (tbc)
- **Richard Lancaster**, Global Head of Biosolids, AtkinsRealis, UK
- **Nuno Broco**, Executive Chairman, ADP Valor, Portugal
- **Vera Eiró**, President, ERSAR – Water and Waste Services Regulation Authority, Portugal (tbc)
- **Stacia Eckenwiler**, Assistant Administrator, City of Columbus Water & Power, Division of Water Reclamation, USA
- **Albin Kaelin,** CEO, EPEA Switzerland, CH
- **Arnt Baer,** Managing Director,Gelsenwasser, Stadtwerkedienstleistungs-GmbH, Germany
- **Frank Dick,** Wastewater Treatment Engineering, City of Vancouver Public Works, USA
- **Jessica Johnson**, Project Manager, City of Cincinatti MSD, USA

- **Peter Grevatt,** CEO, Water Research Foundation, USA
- **Claudio de Jesus,** Chairman & CEO, Águas do Tejo Atlântico, Portugal
- **Toshiaki Yoshida,** Director, Decarbonisation and Resource Recycling Office, Water Supply and Sewerage Planning Division, Water and Disaster Management Bureau, Ministry of Land, Infrastructure, Transport and Tourism, Government of Japan (tbc)
- **Dr. Mokhtar Jaait**, Head of Research and Development, International Institute for Water and Sanitation, National Office of Electricity and Potable Water (ONEE-IEA), Morocco
- **Bill Barber,** Technical Director, CAMBI Inc, USA
- **Jokin Larrauri,** Digital Solutions Director, CIMICO, Spain
- **David L Gadis**, Chief Executive Officer & General Manager, DC Water, USA (tbc)
- **Ana Soares,** Professor of Biotechnology Engineering at Cranfield University, UK
- **Frank Rogalla**, Innovation Consultant, SABESP, Brazil
- **Harald Bier**, CEO, European Biochar, Germany
- **Mike Rose**, CEO, UK Water Industry Research, UKWIR, UK
- **João Oliveira Miguel**, Executive Administrator, ADP Valor, Portugal
- **Aoife Kyne**, Asset Planning Bioresources Manager, Uisce Éireann Irish Water, Ireland
- **Chris Thornton**, Secretary General European Sustainable Phosphorus Platform (ESPP), France
- **Ryan Welsh**, Deputy Director, City of Cincinatti MSD, USA
- **Pavel Policar**, Chairman, VAKH, Czech Republic
- **Yadira Bajon Fernandez**, Policy Delivery Technical Advisor - Sustainable Biomethane and Digestate Processing, Department for Energy Security and Net Zero, UK
- **Frederick Royan,** Associate Partner & Global Practice Area Leader Sustainability and Circular Economy, Frost & Sullivan, UK
- **Dobromir Simidchiev**, CEO, Hydrolia AD, Bulgaria
- **Manuel Sapiano,** Senior Analyst (Hydrogeology), Ministry of Agriculture, Malta
- **Oana Neagu,** Director, COPA COGECA, Belgium (tbc)
- **Ulrik Hansen Folkmann**, Senior Technical Advisor, Trade Council of Denmark, North America, Energy & Environment
- **Wayne Griffith,** Chief of Staff, EVP Strategy & Performance, DC Water, USA
- **Elias Colom Hernandez,** Corporate Director & ESG , Global Omnium, Spain

- **Michael Botse Baidoo,** Chief Manager, Corporate Planning, Monitoring and Evaluation, Ghana Water, Ghana
- **John Brosnan,** Bioeconomy Executive, ICOS - Irish Cooperative Organisation Society, Ireland **(**tbc)
- **Jeanette Henderson,** Principal: Innovation, OFWAT, UK
- **Joao Simao Pires,** Executive Director, Portuguese Water Partnership, Portugal
- **Ramón González Tévar**, Director of Operations, Aljarafesa, Spain
- **Gillian Ide,** Knowledge and Insight Manager Engineering, United Utilites, UK (tbc)
- **Jaroslav Mosko,** Professor, Department of Power Engineering University of Chemistry and Technology, Prague, Czech Republic
- **Miguel Angel Sanz,** President, MS Consult, Spain
- **Darko Lojen,** Director of Operations EMEA, Drylet, Serbia

Stream 1 – Global Drivers, Policy and System Transformation

1.1. The Global Pivot in Organic Waste Stream Management

How global pressures are accelerating the shift from waste disposal to circular resource systems.

Organic waste management is at a tipping point. Population growth, tighter regulation and pressure to reduce landfill are exposing the limits of traditional approaches, while rising demand for energy, water and nutrients is driving a shift towards circular solutions.

Wastewater, biosolids, food waste and agricultural residues are increasingly recognised as valuable resources. As systems evolve into urban bio-refineries, these streams are becoming central to renewable energy, nutrient recovery, water reuse and bio-based production.

Unlocking this opportunity will require not only cross-sector collaboration but also the mobilisation of investment to scale infrastructure, de-risk innovation and build viable markets for recovered resources.

This session explores how cities, agriculture, industry and investors can collaborate to build scalable circular value systems and unlock the full potential of bio-resources.

- Cross-sector roles in circular bio-resource systems
- Regional approaches and global market dynamics
- Phosphorus security and nutrient recovery

- Mobilising investment and building viable markets for recovered resources

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1.2. The Agricultural Value of Biosolids

Exploring the role of biosolids in improving soil health and supporting sustainable agriculture.

Biosolids contain valuable nutrients and organic matter that can play an important role in improving soil health and supporting sustainable agricultural systems. When properly treated and managed, they can enhance soil structure, increase organic carbon, and reduce dependence on synthetic fertilisers.

What is the role of biosolids in modern agriculture and what are the environmental benefits and the regulatory and public perception challenges associated with their use?

- How do biosolids contribute to more resilient and circular nutrient systems while maintaining high standards of environmental protection and food safety
- Environmental safeguards and regulatory frameworks governing agricultural reuse
- The future of land application compared with thermal and advanced treatment pathways
- Integrating biosolids into circular agricultural and nutrient management systems
- Differentiating biosolids based on quality, treatment and end-use suitability
- The role of recycled nutrients in global fertiliser security

1.3. Circular Cities: The Urban Bioeconomy

Exploring how cities can integrate wastewater, organic waste and energy systems to unlock the urban circular bioeconomy.

Cities are both major consumers of resources and generators of complex waste streams, making them critical to the transition towards circular systems. As urban populations grow, the challenge is to move beyond linear infrastructure models and instead design integrated systems that recover value from wastewater, food waste and other organic streams.

By connecting water, waste and energy systems, cities can evolve into circular bio-refineries, recovering energy, nutrients and materials while reducing environmental impact and strengthening resilience. Delivering this transformation requires coordination across utilities, municipalities, industry and urban planners.

- Urban bio-refineries and circular infrastructure systems
- Integration of wastewater, food waste and organic resource streams
- Transitioning from disposal to circular resource recovery
- Linking urban systems with regional agriculture through nutrient recycling

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1.4. Regulation, Public Trust and the Circular Bioeconomy

This session explores how policy, science and public engagement can align to support safe, trusted and scalable circular bioeconomy systems.

Regulation is central to enabling the transition from waste management to resource recovery. Governments are increasingly required to balance environmental and public health protection with the need to unlock innovation, circularity and market development. At the same time, public trust remains a critical enabler, requiring transparency, clear standards and effective stakeholder engagement.

A defining challenge is the inherent variability of organic waste streams. Differences in composition, source and treatment pathways create complexity for regulation, quality assurance and end-use markets, making robust classification and standards essential.

- Regulatory frameworks shaping the management, valorisation and reuse of organic waste streams
- Differentiation of resources based on composition, treatment and risk profiles
- Implications of emerging contaminant regulation across the sector
- Policy mechanisms driving circular resource recovery and reducing disposal
- Strengthening social license through effective stakeholder engagement

1.5. The Bioeconomy, Carbon Strategies and Climate

This session explores how biosolids-led strategies, within the wider organic waste landscape, can contribute to decarbonisation and position utilities as key actors in the emerging carbon economy.

Organic waste streams are emerging as a critical interface between the bioeconomy and climate strategy. While wastewater and biosolids systems are sources of greenhouse gas emissions, they also offer significant opportunities for mitigation through renewable energy generation, methane capture and carbon sequestration.

Biosolids remain central to this transition, but alongside food waste, agricultural residues and industrial by-products, they form part of a broader carbon management system with the potential to support net zero ambitions. As carbon accounting frameworks evolve, these resource streams are increasingly being recognised within national and corporate climate strategies.

Realising this opportunity will require the integration of carbon management into wastewater and resource recovery infrastructure, alongside the development of carbon markets and climate finance mechanisms to support investment and scale.

- The greenhouse gas footprint of biosolids and organic waste systems
- Renewable energy generation and methane capture from bio-resources
- Carbon sequestration through soils and biochar
- Utilities as platforms for carbon management
- Integrating bio-resource strategies into climate policy and net zero frameworks
- The role of carbon markets and climate finance in scaling solution

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Stream 2 – Circular Bioeconomy Systems and Resource Recovery

2.1. Wastewater Plants as Urban Bio-Refineries

How wastewater infrastructure is evolving into circular bio-resource systems.

Wastewater treatment plants are being redefined from waste management facilities into integrated resource recovery platforms. Advances in engineering, biotechnology and recovery processes are enabling utilities to extract energy, nutrients, materials and reusable water, transforming infrastructure into urban bio-refineries that support energy systems, agriculture and circular material flows.

This shift is changing how wastewater systems are designed, financed and operated, creating new opportunities for value generation alongside environmental protection.

This session explores how utilities are advancing this transition through technology, system integration and cross-sector collaboration.

- Wastewater treatment plants as integrated bio-resource recovery platforms
- Carbon-negative wastewater systems
- Technologies for energy, nutrient and material recovery
- Infrastructure and operational challenges in system transition
- Digital optimisation of bio-refinery operations
- Partnerships across utilities, agriculture, industry and energy sectors

2.2. Closing the Nutrient Loop

Technologies and policies enabling phosphorus and nitrogen recovery across wastewater and organic waste streams.

Modern agriculture depends on synthetic fertilisers derived from finite resources and energy-intensive processes. At the same time, wastewater, biosolids and wider organic waste streams contain significant quantities of recoverable nutrients that remain underutilised. Recovering and recycling phosphorus and nitrogen presents a major opportunity to reduce dependence on mined inputs and strengthen the sustainability of global food systems.

This session explores how technologies, policies and market mechanisms are enabling nutrient recovery and how recycled nutrients can be integrated into agricultural supply chains.

- The strategic importance of phosphorus and nitrogen for food security
- Technologies for nutrient recovery, including struvite precipitation and ammonia capture
- Integrating recycled nutrients into agricultural systems
- Digital traceability and certification of recovered nutrients

- Regulatory frameworks and quality standards
- Circular nutrient systems linking wastewater, organic waste and agriculture

2.3. Energy from Biosolids

How biosolids-led energy systems, within the wider organic waste landscape, can be integrated into decarbonisation strategies and connected to broader energy networks.

Biosolids, alongside food waste, agricultural residues and other organic streams, represent a significant and underutilised source of renewable energy. Through anaerobic digestion, biomethane production, thermal conversion and emerging biological processes, these resources can support electricity generation, heating and transport fuels.

As utilities and cities seek to reduce emissions and improve efficiency, energy recovery is becoming a central component of wastewater and organic waste management strategies, positioning infrastructure as an active contributor to low-carbon energy systems.

- The energy potential of biosolids and organic waste streams
- Technologies for energy recovery, including anaerobic digestion and biomethane
- Wastewater utilities and cities as renewable energy producers
- Integration with national decarbonisation and energy strategies
- AI optimisation of biogas and biomethane production
- Linking waste and wastewater systems with wider energy networks

2.4. Industry and the Circular Bioeconomy

Examining the role of industry in creating demand, partnerships and infrastructure for circular bio-resource systems.

Industry plays a critical role in the circular bioeconomy as both a major source of organic waste and a key user of recovered resources. As pressure grows to decarbonise and improve resource efficiency, industrial sectors are increasingly partnering with utilities and technology providers to unlock value from wastewater, biosolids and organic by-products.

These collaborations are enabling integrated bio-resource systems, where waste streams become inputs and industrial processes form part of circular value chains across energy, materials and agriculture.

The next step is scaling these models into commercially viable systems by aligning innovation with market demand, strengthening partnerships and connecting industrial processes with resource recovery platforms to create markets for bio-based fuels, materials and nutrients.

- Aligning technical innovation with market demand
- Industrial symbiosis and shared infrastructure
- Long-term partnerships to support investment and risk sharing
- Renewable fuels and bio-materials from biosolids
- Creating commercial demand for bio-resources

2.5. Designing the Wastewater Bio-Refinery – Beyond the Digestion vs Thermal Debate.

How integrated systems combine biological and thermal processes to maximise resource recovery.

Wastewater infrastructure is evolving into integrated bio-refineries that combine biological treatment, thermal conversion and nutrient recovery within a single system. Rather than choosing between pathways, utilities are adopting hybrid approaches to maximise the recovery of energy, materials and nutrients from biosolids and wider organic waste streams, while reducing emissions and environmental risk.

These next-generation facilities can generate renewable energy, recover critical nutrients, produce biochar and supply bio-based materials, positioning wastewater systems as multi-product resource platforms.

This session explores how to design and scale these integrated systems, including the technologies, partnerships and investment models required.

- Wastewater treatment plants as integrated bio-refineries
- Combining digestion, thermal and nutrient recovery processes
- Maximising resource recovery from biosolids and organic waste streams
- Biochar, renewable energy and nutrient recovery in circular systems
- Infrastructure design, operational challenges and system integration
- Cross-sector partnerships across utilities, agriculture, energy and industry
- Investment models for next-generation resource recovery facility

Stream 3 – Science, Research and Innovation

3.1. Emerging Contaminants

Understanding PFAS, microplastics and pharmaceuticals in biosolids systems.

Emerging contaminants such as PFAS, pharmaceuticals, microplastics and other persistent compounds are increasingly shaping the scientific and regulatory landscape surrounding biosolids management and reuse.

These substances raise important questions about environmental risk, treatment effectiveness and long-term impacts on soil, water and ecosystems. As detection methods improve and scientific understanding evolves, utilities and regulators are now required to reassess existing treatment processes and monitor frameworks. This session will explore the latest research into emerging contaminants in biosolids systems, examining how science is informing regulation, guiding risk management and driving the development of new treatment and monitoring technologies.

- The sources and pathways of emerging contaminants in wastewater and biosolids
- Current scientific understanding of PFAS, microplastics and pharmaceutical residues
- Advances in real-time monitoring and digital detection technologies
- Treatment technologies and process innovations designed to mitigate risks
- Implications for regulation, biosolids reuse and public confidence

3.2 Breakthrough Technologies Innovation Forum

A showcase of next-generation technologies for resource recovery.

Rapid advances in science and engineering are unlocking new possibilities for recovering value from biosolids and organic waste streams. Emerging technologies are enabling higher levels of energy recovery, nutrient extraction and material production while improving treatment efficiency and environmental performance.

Processes such as hydrothermal carbonisation, pyrolysis, advanced anaerobic digestion and novel nutrient recovery systems are beginning to reshape how wastewater infrastructure is designed and operated.

This forum will showcase next-generation technologies that have the potential to transform biosolids management and support the transition towards circular bio-resource systems

- Emerging treatment and conversion technologies for biosolids and organic waste
- Innovations enabling higher levels of energy, nutrient and material recovery
- Digital optimisation and AI in wastewater resource recovery
- The role of biotechnology, advanced materials and digital monitoring systems
- Challenges in scaling promising technologies from pilot to full deployment
- How breakthrough technologies can support circular bioeconomy infrastructure

3.3: Global Research Collaboration

Strengthening partnerships to accelerate innovation across organic waste streams and resource recovery.

Advancing circular bio-resource systems across wastewater, biosolids and wider organic waste streams requires coordinated collaboration between universities, utilities, industry and policymakers. The challenges are complex and interdisciplinary, demanding shared research, data and operational insight across regions.

This session explores how global research partnerships can accelerate innovation, strengthen the evidence base for policy and support the development of scalable solutions.

- The role of international collaboration in biosolids and organic waste research
- Partnerships between academia, utilities, industry and technology developers
- Sharing data, pilot results and operational experience
- Aligning research with real-world system challenges
- Building global knowledge networks to accelerate the bioeconomy

3.4 Digital Infrastructure for the Circular Bioeconomy

How data, artificial intelligence and digital platforms are transforming wastewater systems into intelligent bio-resource networks.

As wastewater treatment plants evolve into multi-product bio-refineries, the complexity of managing resource recovery systems increases significantly. Digital technologies are therefore becoming essential for optimising treatment processes, monitoring environmental performance and integrating wastewater infrastructure with wider energy, agricultural and industrial systems.

Advances in sensors, digital twins, artificial intelligence and data platforms are enabling utilities to optimise energy recovery, track nutrient flows, monitor contaminants and improve operational efficiency across increasingly complex treatment systems. These technologies are also supporting the integration of

wastewater infrastructure with smart cities, circular supply chains and carbon management systems.

How critical is the growing role of digital infrastructure in enabling the circular bioeconomy and how are utilities are forward looking utilities deploying data-driven systems to improve resource recovery, environmental performance and system resilience.

- AI and advanced process control in wastewater treatment plants
- Digital twins for wastewater infrastructure and bio-refineries
- Monitoring nutrient flows and circular resource supply chains
- Sensors and real-time monitoring of emerging contaminants
- Digital integration between wastewater, energy and agricultural systems
- Data platforms enabling circular bioeconomy markets8

Stream 4 – Deployment, Markets and Infrastructure

4.1. From Innovation to Infrastructure

Integrating new technologies into operational wastewater systems

While many promising technologies for biosolids treatment and resource recovery are emerging from research programmes and pilot projects, the real challenge lies in translating these innovations into operational infrastructure. Utilities must integrate new technologies into complex systems that require reliability, regulatory compliance and long asset lifecycles.

What are the practical challenges of scaling innovation within wastewater systems, examining how utilities, technology developers and engineering firms can move solutions from pilot stage to full deployment while managing operational risk and long-term performance.

- The challenges of scaling new technologies from pilot projects to full infrastructure
- Integrating innovation within existing wastewater treatment systems
- The role of utilities, engineering firms and technology developers in creating pathways for faster implementation of proven technologies
- Managing operational risk and regulatory compliance when adopting new processes
- Standardisation and regulatory pathways for new technologies

4.2 Financing the Circular Bioeconomy – Infrastructure, Investment and Scale

How utilities, investors and governments can work together to finance and scale circular bio-resource infrastructure.

Building circular value systems will require significant investment in new infrastructure, technologies and supply chains. As wastewater treatment plants evolve into resource recovery platforms capable of producing renewable energy, recycled nutrients and bio-based materials, traditional financing models used for wastewater infrastructure may not always align with the commercial realities of these emerging systems.

The discussion will examine how public-private partnerships, green finance instruments, climate funding and innovative investment models can accelerate the deployment of circular bio-resource systems and enable wastewater infrastructure to become a platform for sustainable growth.

- Financing challenges associated with circular bio-resource infrastructure
- Infrastructure investment models for large-scale resource recovery systems
- The role of public-private partnerships in scaling circular infrastructure
- Green finance, climate funding and sustainable investment mechanisms
- De-risking investment in emerging resource recovery technologies
- Aligning infrastructure investment with circular economy and climate goal

4.3 Creating Markets for Bio-Resources

Exploring how stable markets, supportive policy and industry partnerships can unlock demand for bio-fertilisers, renewable fuels and other products derived from biosolids and organic waste streams

The long-term success of circular bioeconomy systems depends not only on technology and infrastructure but also on the development of stable markets for the resources they produce. Recovered nutrients, bio-fertilisers, renewable fuels and bio-based materials must compete with established products and supply chains.

What can governments, utilities and industry do to stimulate demand, develop quality standards and create market conditions that allow bio-resource products to scale and become economically viable?

- Industrial demand for bio-based fuels and materials from industries such as aviation, chemicals and energy
- Market development for recycled nutrients and bio-fertilisers
- The role of policy incentives and standards in supporting bio-resource products

- Digital marketplaces for circular bio-resource products
- Building supply chains linking wastewater systems with agriculture and industry
- Overcoming barriers to market acceptance of recovered materials
- Creating long-term economic value from circular bio-resource systems

4.4 The WEX Global Bioeconomy Utility Round Tables

Fast moving hosted Round Table session in which 20 leading utilities will present their bioresources challenges for the future.

- Choose a Utility and join the table.
- Meet the Utility table host and exchange contacts with your fellow guests.
- Learn about the challenges and plans of the utility and exchange ideas in intensive discussions with other delegates at the table
- 3 table rotations will leave you with new contacts, new ideas and new business opportunities.

4.5 The WEX Global Partnerships for Progress Round Tables

A unparalleled opportunity to engage directly with the people leading transformative bioeconomy projects around the world.

Featuring roundtables hosted by experts, this dynamic and interactive format brings together, policymakers, industry leaders, and stakeholders to collaborate on strategies for sustainable water use and management.

Each roundtable will focus on specific aspects of the circular bioeconomy , providing a platform for in-depth discussions, solution-driven dialogue, and the exchange of innovative ideas that could become gamechangers in the field. With three rotations, delegates can explore multiple themes, gain fresh perspectives, and build connections that strengthen networks and spark new partnerships.

4.6 The WEX Global Bio Innovation Forum

Bringing new and innovative start-up companies together with major organisations. The Forum provides a powerful platform to accelerate visibility, partnerships and deployment across water, agriculture, energy and industry.

The Innovation Forum is a dynamic, fast-paced showcase of breakthrough solutions transforming biosolids and organic waste into value. Six pioneering companies present their technologies to a panel of expert judges and a live audience, sparking real-time debate, critical insight and interactive discussion—culminating in the Global Bioeconomy Innovation Award, presented at the Summit Gala Dinner