WORKING PROGRAMME

09.30 Chair's welcome
KEYNOTE: Uses and standards for biochars *Dr Saran Sohi, Senior Lecturer in Soil Science and Biochar, University of Edinburgh*
Converting sewage sludge to biochar – a review of options & feasibility *Peter Talboys, Bioresources Associate – Atkins and Dr Yadira Bajon-Fernandez, Senior Lecturer in Bioresources Science and Engineering – Cranfield Water Science Institute* • Potential applications for biochar – ranging from well-known to more novel • The regulatory / environmental factors influencing the suitability of sewage sludge biochar for a range of applications • Discussion of the technology & integration choices for optimal deployment of ATC, depending on drivers
Carbonisation of biosolids utilising innovative Pyrogenic Carbon Capture and Storage (PyCCS) Negative Emissions Technology (NET) *Ian Mugford, Technical Director – Carbonisation – TerrAffix Soil Solutions Ltd* • Carbonisation: Towards a Low Carbon Biosolid Cake Treatment Strategy. A gamechanger on the journey to Net Zero and Beyond: TerrAffix's demonstration plant, is turning biosolids into a valuable resource, Biochar, to tackle the Climate Emergency. • A continuous, relocatable and scalable solution, that could be deployed directly at the point of waste creation. • Potential Advantages of Carbonisation over traditional biosolids disposal
Morning Break and Networking
Carbonisation of biosolids: design challenges, success factors, and long-term operational data from four projects in Europe *Ulrich Knörle, Managing Director and Dr. Elke Sellering, Sales Manager – ELIQUO TECHNOLOGIES GmbH*
It's economics, stupid *Richard Jackson, Director – Standard Gas Technologies Ltd* • SGT has developed a new technology combining the advantages of fast pyrolysis with a method for maximising the extractable energy from any carboniferous feedstock. • The water treatment sector has two problems not one: disposing of sludges that contain chemicals that survive existing treatments – and thus re-enter the environment; and doing so in a way that is economically viable. • Only when a technology is available that can solve both of these problems, will the sector move to stop land-spreading otherwise the costs to the consumer are too great. SGT can solve both.
Bioforcetech and OurCarbon, a sustainable future for sewage sludge (VIRTUAL) *Dario Presezzi, CEO – Bioforcetech*

- The Bioforcetech System overview focusing on pyrolysis, energy/mass balance, achievements and permits, EPA PFAS testing
- Scaling updates and commissioning plants
- OurCarbon® biochar overview, emerging and established markets, and material breakthroughs including a carbon negative structural grade concrete additive.

Lunch Break and Networking

Win-win for municipalities: PYREG recycling of sewage sludge provides high-quality phosphorus fertilizer, renewable energy and CO2 certificates
Dipl.-Ing. Helmut Gerber, CTO & Founder – PYREG GmbH

- How does phosphorus-preserving carbonization of sewage sludge work? Field reports from PYREG plants around the world.
- PYREG fertilizing effect is up to 90% of the effect of triple superphosphate (TSP)
- Carbonization destroys pathogens in the feedstock, almost completely removes organic pollutants such as pharmaceuticals as well as hormone-disrupting molecules, and eliminates cancer-causing "forever chemicals" PFAS

Producing biochar - from pain to gain
Peter Gronbjerg, Owner – PyroDry

- Full solution - from sludge to a stable pellet
- Super-efficient - Self powered within the drying process. Electricity only used to move material and control system
- Modular & Compact - Easy to ship and install

Sewage sludge derived pyrochar and hydrocha as alternative to P mineral fertilisers in arable crops
Maria Pimenta Ocampo, EBRI Research Associate – Aston University

- Comparison between Pyrolysis and Hydrothermal Carbonisation technologies to treat anaerobic digested sewage sludge
- Physical Chemical Characterisation of the materials obtained at different temperatures and processes
- 2 year, glasshouse pot trial testing different rates and combinations with sludge to assess soil changes (pH, available P, OM) and crop yield

Afternoon Break and Networking

Characteristics of faecal sludge biochar and its impact on the growth and fruit yield of tomato (Solanum Lycopersicum L.)
Larissa Nicholas, Impact and Engagement Officer – Swansea University

- Full-scale pyrolysis of faecal sludge
- Physico-chemical properties of faecal sludge biochars
- Impact of faecal sludge biochars on tomato yield

Biochar-production from sewage sludge through hydrothermal carbonization and techno-economic aspect as an adsorbent for emerging contaminant removal
D. P. Senthil Kumar, Head – Centre of Excellence in Water Research (CEWAR) - Sri Sivasubramaniya Nadar College of Engineering, India

- Managing sewage sludge (SS) is an economic and environmental burden in India
- Hydrothermal carbonization is a fruitful way to manage SS
- Tailor-made properties of biochar can replace the activated carbon columns in existing wastewater treatment plant
- Reuse of the spent biochar needs more attention to obtain sustainable sludge management

Close by 16:45