Sewage sludge co-treatment: a water company perspective

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Over 70% of Anglian Water's sludge is transferred by road to 10 main STC's!

AW transfers c.2.0m tonnes of liquid sludge from 1,091 WRC's and a further 290k tonnes of dewatered sludge to 8 of these sites

c.22% of bioresources cost can be attributed to the collection and transfer of raw sludge to our STCs

156,000tds production forecast 2020/21, with treatment capacity of 175,300tds across 10 main sites (157,770tds @ 90% availability)
Increased production means Anglian Water will need to build more capacity in 2020 and again in 2024 - but is there another option?
AD plants – sewage sludge/OOW

- Potential for trading with (three) neighbouring water companies is limited
- Opportunity with third-party AD sites is much greater

- A significant reduction in haulage cost (and carbon savings) could be delivered, if environmental regulation promoted, rather than restricted, co-treatment
- Market is likely to develop gradually, as additional capacity is needed
- Mandatory food waste collections will significantly increase potential for co-treatment
Current situation

Biosolids
Sewage sludge is collected and undergoes primary treatment at 8,500 WwTWs
Sludge is treated at 174 STCs producing 3.6 million wet tonnes/annum

Source segregated AD
473 operational plants – 329 are farm fed and 144 waste fed – capacity of 12.3 Mt
WRAP state 10.2 Mt of food-waste produced per annum – 4.7 Mt from households

There is potentially spare capacity and unused feedstock available for co-treatment

Water Industry data - 2018
Data adapted from NNFCC and ADBA
Environmental legislation – a trading barrier?

- Co-treatment including sewage sludge -
  - materials immediately deemed a waste, regardless of whether the co-treated materials are wastes in isolation
  - materials don’t meet any of the existing QPs /EOW standards & SUARs don’t apply
  - materials require EPR Standard Rules 2010 No. 4 and associated deployment for each 50 ha block of land
  - adds significant admin/permit costs, delays & associated operational cost
  - should be mindful that sludge already contains food waste!
  - opportunity is significant, but the associated legislation blocks acceptance
    - Data shows current co-treatment in the water industry is < 1%
    - AW operated two co-compost sites, but closing operations, due to restrictions/costs

- Recent workshop to discuss co-treatment - trade bodies for the other organic waste sector recognise the benefits of co-treatment and agree action is required to deliver the opportunity
An international perspective

- Co-treatment of sewage sludge with other organic materials (e.g. green or food waste) is not new
- Co-composting of sewage sludge and green waste is common across the world (e.g. US, Europe, Canada and previously in the UK). Composted biosolids accounts for c.20% of sludge ‘disposal’ in Europe (Eurostat 2015)
- Co-digestion is successfully utilised in many countries (e.g. Germany, Denmark, Switzerland, Austria). A US EPA survey in 2015 found that 20% of AD facilities in the USA co-digest sewage sludge with imported feedstocks, primarily food waste
- Although there are significant differences in how organic waste treatment is managed in some countries (e.g. municipality/local government control) which encourages co-treatment, the benefits are applicable to the UK
Biosolids Assurance Scheme – BAS

Water Industry initiative to provide reassurance to the food chain and consumers delivered by Assured Biosolids Ltd (ABL) a not-for-profit industry owned company

Brings together regulations and best practice into a single transparent Standard audited by NSF Certification, with UKAS Accreditation

Sets a minimum Standard – which protects the environment & creates a level playing field for all operators and contractors

Stakeholder input and support are essential to maintain validity and credibility

Wastewater and other inputs are allowable, subject to Source Material Risk Assessments

Members still required to comply with relevant regulations

Additional controls can be added if required

https://assuredbiosolids.co.uk
Possible way forwards

- EPR is a framework; the EA apply the framework dependent on the level of risk -
  - A ‘new point’ e.g. hybrid permit
  - An existing control e.g. exemption

- Using additional controls, perhaps BAS plus any amendments as required to reduce the risk, should allow a reduction in regulatory effort?
  - Therefore reducing the cost and oversight required

- Depends on demonstrating the controls already in place and potentially adding others

- Engagement is underway, as part of the EA’s Sludge Strategy, along with other initiatives

**There’s a clear need and demand for change – reducing cost and providing environmental benefit**
Conclusions

- Co-treatment can provide environmental and financial benefits:
  - Facilitating future market development, ensuring efficient investment and reducing impacts on customers’ bills
  - Providing environmental protection and benefits
- The other organic waste sector and the water industry agree there is a need and a demand for change
- We now need a robust but proportionate regulatory approach, that allows co-treatment to succeed, rather than restricting it’s development.
Water is our business. We handle with care, and don’t cost the earth.

Thank you for listening.