Bioresources market development data request
Anglian Water – submission 9th March 21 (for publication)
Commentary to accompany data tables ('Bioresources market development data request FINAL 1 Feb 2021.xls')

General
We have completed the site lists as they are presented in our published market information tables. The sites are grouped by type and then in alphabetical order for clarity.

Table 1 – Company
Lines 1 – 3 The sum of these lines do not match APR table W4 line 11 because in APR21 we deemed raw cake road transport to be a treatment activity and included the costs of it in table W4 block B. (Our APR commentary for this line stated (page 192 Note 3): We have no liquid sludge transported by truck. All transportation of raw cake is recorded under Sludge Treatment (Table B) as it is >10% dry solids.)

Table 2 – Transport data
Sites 1 – 313 are our water recycling centres serving population equivalent of more than 2,000, as set out in the 'WwTW' tab in the market information tables.

Sites 314 – 1,123 are our water recycling centres serving population equivalent of less than 2,000, as set out in the 'Small WwTW' tab in the market information tables.

As all STC output goes to Land there is no secondary route and we have therefore entered this as Land 100% for the Principal destination and Other 0% for the Secondary destination. This is consistent with interpretation of the Guidance and avoids blank cells being left. Exceptions to this are March and Boston as STCs. Both of these sites had a hired-in lime plant for short periods during 2019-20 and have been included solely on the basis of the export of sludge as March exclusively treated imported raw cake and Boston also imported; exporting its raw cake production for all but the first few weeks of the reporting period, the small amount of indigenous sludge limed at Boston is not felt to be material.

Table 3 – Total capacity
Type of site
Sites 1 – 10 represent our ten Advanced Anaerobic Digestion STC's. Sites 11 & 12 are sites where we operated contracted in mobile liming plants to treat excess raw cake stock in 2019-20.Sites 13-24 are our raw dewatering hub sites. These sites import liquid sludge where it is blended with indigenous sludge before dewatering to >10%DS. Dewatered raw cake produced at these sites in transported to sites 1-12 for treatment.

Sites 25-36 are sites that dewater (to >10%DS) the indigenous sludge production only. These sites are not open to receive imports.

Site specific notes
Site 2 (Cambridge) – Our Cambridge Water Recycling Centre (including the STC) is scheduled to be relocated and the existing site re-developed. Subject to obtaining the relevant planning and environmental consents, the new site (sized at 16,000 tds per annum for sludge treatment) will be commissioned in 2028-29.

Site 4 (Cliff Quay) – A digester was taken offline in 2019-20 with work completed in period 1 2020-21, leading to a small reduction in total capacity in 2020-21.

Site 6 (Cottonvalley) – An AMP6 project to upgrade the thermal hydrolysis technology and construct an additional digester was commissioned in June 2020, unlocking additional capacity from quarter 2 2020-21.

Site 10 (Whitlingham) – Our PR19 business plan assumes construction of additional capacity at Whitlingham STC. The data table assumes this additional capacity will be available for use by the end of quarter 2 in 2023-24.

Sites 11 & 12 (Boston & March) – These are sites where we have operated mobile liming plants for treatment of excess raw cake in recent years. There is no permanent sludge treatment capability on these sites and therefore do not offer planned treatment capacity going forward.

Site 22 (Spalding) – This site has historically produced dewatered raw cake (>10%DS) as was the case in 2019-20. However, due to the age, condition and operating costs of the installed plate press technology, a decision was taken to close this centre as a dewatering site. New thickening (< 10%DS) has been installed, with sludge now and in future transported as liquid to an STC or dewatering hub site.

Total Capacity Assessment (lines 1 -10)

The STC capacity (sites 1-10) has been taken from the original plant design basis. Typically this will be based on either:

- Volumetric feed to the digesters at the target dry solids feed to provide 14 days' hydraulic retention at our biological hydrolysis sites or 16 days' hydraulic retention at our thermal hydrolysis sites.
- Volumetric feed at the target dry solids to the advanced anaerobic pre-treatment stage (biological or thermal hydrolysis or the pasteurisation plant for Chelmsford STC).

The only exception to this is site 6 (Cottonvalley STC) where the pinch points in the process are the installed capacity of final dewatering, limitations on installed CHP capacity and the ability of the host water recycling centre to receive and treat the high strength dewatering liquors. Significant capital investment would be required to further unlock this available capacity and we have no firm plans to do this at this time.

For dewatering hub sites (13-24) the capacity has been taken from either:

- Capacity of installed dewatering technology
- Budgeted maximum daily volume + indigenous sludge volume.

Budgeted maximum daily volumes have typically been used for sites which have limits on sludge import volumes or restrictions on the ability of the host water recycling centre to receive dewatering liquors.

Table 4 – Tradeable capacity

We operate our STC's as an integrated network of sites. This means we plan and flex capacity across our network to meet our sludge production profile to cater for planned and reactive downtime. As a result, we do not have guaranteed tradeable capacity at individual named sites. Therefore, any capacity we do have is to be considered 'Floating Capacity' and is generally available for short term seasonal trading. Opportunities for fixed trades of at least one year are limited as our strategy over recent years has been to consolidate our STCs and trigger investment for new additional capacity when our production approaches 90% of our total installed capacity (equals headroom capacity – table 5).

Whilst we are open to evaluate any trading opportunity to import sludge, for this to be viable it is likely in many cases this would require us to trade sludge out elsewhere in our region.

Table 5 – Headroom capacity

Our headroom capacity for sludge treatment (sites 1-10) is based on 90% of our total capacity, in effect reserving the 10% difference as retained operational headroom to cover planned and reactive downtime across the network of STC's. In reality, operational headroom is not allocated or ringfenced to a specific site. Rather, the retained operational headroom is applied across the network of our ten STCs.

Whilst we have available capacity on some sites at our raw dewatering hubs (sites 13-24), at this stage we would not offer this capacity for trading in terms of end-to-end treatment and recycling of the sludge as we do not have sufficient available treatment capacity. However, we would consider options where applicable to trade import sludge into our sites for dewatering and then displace by trading out elsewhere, utilising an effective network-wide mass balance approach.