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Trust in water

Consultation on economic asset valuation for the bioresources RCV allocation at PR19

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About this document

Development of markets for bioresources will inform, enable and incentivise companies operating in the sector to do more for less; to make the best use of resources and to find new ways of doing things. This will help bring benefits for customers, investors and the environment.

In **Water 2020: our regulatory approach for water and wastewater services in England and Wales**, May 2016, we set out our decision to introduce a binding separate price control for bioresources at PR19 that was set using an explicit RCV allocation, as part of the measures to help support the development of bioresources markets.

This document is a consultation on the approach for water and sewerage companies (WaSCs) to value their bioresources assets to inform the allocation of the legacy wastewater Regulatory Capital Value (RCV) at 31 March 2020 between the network plus and bioresources controls at PR19 and the information that is required from companies in September 2017. In order to provide a level playing field for bioresources trading and processing and to protect customer interests, it is important that a robust and accurate valuation of sludge assets supports the proposed RCV allocation to bioresources. This proposed guidance in this document sets out our view of the appropriate approach to asset valuation.

Alongside this consultation we publish a report we have commissioned from **Reckon LLP** (with **Jacobs**) that we intend will be used by companies as they consider their valuation of sludge assets to inform their proposed RCV allocation. This **report** provides supporting guidance on the topics considered in this consultation.

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1. Executive Summary

We welcome your views on the proposals we set out in this consultation. In summary our main proposals are:

- Companies will complete a valuation based on the future economic value of bioresources assets, as at 31 March 2020. An allocation of the pre-2020 legacy wastewater RCV between bioresources and wastewater network plus using this valuation will help promote a level playing field for the development of markets.
- Companies should undertake cross checks to provide assurance that the RCV allocation based on economic value is appropriate and protects customer interests. These should include testing if the allocation has an impact on customer bills or on the company's ability to set charges in line with both charging rules and competition law.
- If the cross checks reveal an issue arising from the proposed allocation of RCV, the company should propose an alternative allocation of the RCV, explaining why this allocation is appropriate to protect customers including by promoting a level playing field for markets.
- Collecting bioresources asset economic valuation information at site level will allow companies to make best use of the most relevant information available to them, at a lower cost than requiring costing of existing assets and collecting data on their condition as at previous valuation exercises.
- Companies must submit a detailed explanation of their proposed RCV allocation including the underlying information in the format we have set out by 29 September 2017. This timetable is intended to allow us to provide feedback by the end of January 2018, well in advance of submission of company business plans in September 2018.
- We will confirm the allocation of RCV to the bioresources price control and network plus price control (the remainder) as part of PR19 determinations.
- We have committed that our price control framework for PR19 will provide the same nature and degree of regulatory protection as at present, for the RCV allocated to bioresources at 31 March 2020.

In producing these proposals we have been supported by Reckon LLP and Jacobs. Their report is included alongside this consultation, which provides supporting information that companies may wish to consider.

2. Background to the bioresources RCV allocation at PR19

This section sets out background information on why an allocation of the pre-2020 legacy wastewater RCV to the bioresources control is required to support the development of markets.

2.1. Introduction

In “Water 2020: our regulatory approach for water and wastewater services in England and Wales”, we explained that promoting markets in bioresources will deliver efficiencies in treatment and usage and encourage technological innovation. This means:

- companies can trade with each other and use processing centres in other company areas to improve efficiency in the short term;
- more efficient investment to make the most of sludge processing across company boundaries in the longer term; and
- better interaction and integration with the wider organic waste market, enabling efficient site and resource sharing.

As we set out in May 2016 to set the conditions to enable markets in bioresources to develop we will:

- introduce separate binding price controls in PR19;
- allocate companies' assets to the controls to encourage transparency and market entry;
- protect efficiently incurred investment up to 2020 to provide investor certainty; and
- develop information platforms to enable potential new entrants to see opportunities in the market.

This consultation proposes how we will allocate the value of companies' assets to the new bioresources price control. We currently have a single value for wastewater RCV that is the capital value of its wastewater assets, including bioresources assets, for regulatory purposes. We created this regulatory tool shortly after privatisation for the purposes of setting price limits. It captures the capital invested in the business and forms part of our building block approach to price controls.

To allocate part of the wastewater RCV to the new bioresources price control we will take a focused approach, where the allocation is based on the value of the assets used. A focused allocation means that the RCV allocation is not driven by the historic discount to the RCV at privatisation (i.e. the difference between the value of the RCV and the value of the assets). This is important as to the extent that the economic value of assets is over and above the RCV, it is rightly attributable to customers and their interests need to be protected. The remainder of the RCV after deducting the economic value of the sludge assets will be allocated to the wastewater network plus control.

The allocation is only for the purpose of setting price limits and is at a company level - it will not necessarily have any implication in the future valuation of individual assets or sites.

For the purposes of this bioresources asset valuation exercise we will use the services definitions in [RAG 4.06](#). The date of valuation is 31 March 2020, so companies will need to accurately forecast asset additions from 2017 to 2020.

We have committed that our price control framework for PR19 will provide the same nature and degree of regulatory protection as at present for the RCV allocated to bioresources price control at 31 March 2020. As we set out in May 2016 we the objectives in allocating the RCV as:

- **Ensuring a level playing field for sludge transport, treatment, recycling and disposal** so that third-party service providers have clarity and confidence that they are participating in markets on equal terms with incumbent companies.
- **Ensuring a level playing field for wider markets and protecting the interests of wastewater customers where WaSCs are involved.** A WaSC could use assets that exist at 31 March 2020 to offer services to customers outside its existing area or for nonregulated activities. One example is providing organic waste treatment outside the core area of wastewater treatment.
- **Avoiding over-recovery of gains from legacy asset sales/purchases** by incumbent companies.
- **Maintaining consistency** between charges and cost recovery.

We are grateful for the input and challenge we have received from companies and other stakeholders at the sludge working groups that has helped us to refine these proposals. Copies of the slides and minutes of this group are available on our website.

The remainder of this section sets out the importance of markets to this valuation and allocation exercise.

2.2. Market context of the valuation

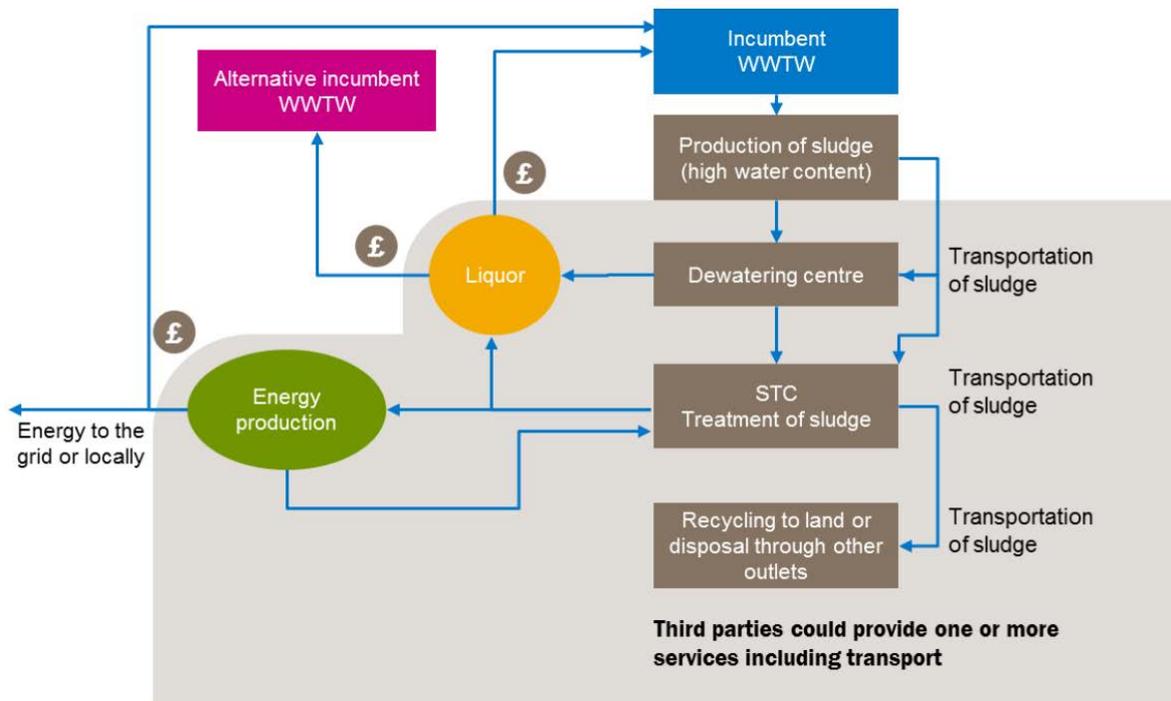
The [report](#) of the targeted review by Cambridge Economic Policy Associates Ltd (CEPA) of sludge and water resources set out a range of objectives and issues associated with valuing sludge assets for the purposes of setting a separate bioresources price control at PR19.

The purpose of valuing sludge assets for the bioresources RCV allocation is different to the past MEAV valuation exercises that companies have undertaken for price reviews and for regulatory accounts prior to 2015. In particular, the assumptions that are made about the assets being valued will be on a different basis. The approach and assumptions need to be considered in the context of the markets that could develop.

Companies are already able to outsource some of the sludge transport, treatment, recycling and disposal services to third parties (e.g. liming of sludge, or recycling sludge to land) and there is some but very limited market activity between WaSCs to provide sludge processing.

The diagram shows the bioresources service and how third parties could offer to provide parts of the service, including likely interactions between the two parties.

Figure 2.1 Potential bioresources markets



The interactions could include:

- **Incumbent pays or receives payment from the third party for (one or more) sludge services.** Where the value of sludge is considered to be negative we would expect the incumbent to pay the third party to provide sludge services. However, where sludge has a material and positive value, the entrant could pay the incumbent to provide its services.
- **Third party pays the incumbent to treat liquor.** If the entrant provides treatment or dewatering services, it may produce a liquor, which could need treating. It is likely that it will pay the incumbent for treatment, based on a trade effluent charges system if the liquor is sent to the incumbent's Wastewater Treatment Works (WwTW). The cost of treatment could be reduced if the entrant is able to pre-treat any of its liquor prior to discharging it to the wastewater treatment works.
- **Incumbent pays the entrant for its energy.** Energy that is produced from treating sludge could be sold back to the incumbent for use in its wastewater treatment.

Market innovations

Beyond bioresources processing and energy generation, there is further scope for markets to add value through innovation. That markets identify opportunities is a large part of the value that they bring. Wherever a third party could utilise a higher value from bioresources than the existing processes, the potential for a market exists. For instance a range of substances end up at sludge treatment works which could be better utilised if collected or treated in a specific way. Whether such resources should be utilised will depend on the extra cost of collecting that specific resource compared to the extra value that a third party can make of it. If and what specific resources should be collected will emerge over time, but a number of possibilities have been put forward in the recent past:

- **Phosphorus** –Treatment works remove phosphorus from wastewater to avoid damaging rivers. However under the wrong conditions phosphates damage equipment and block pipes. However, these phosphates can be particularly valuable if collected.
- **Gold**- Gold is washed into sewers from a number of sources, in tiny quantities. At the moment it is not economic to collect this.
- **Fats oils and greases (FOG)** – In our 2015 discussion paper we highlighted how Argent energy were turning FOGs that blocks sewers into biodiesel. FOG also ends up at a treatment works and is a component of the resulting bioresources.

In each case, it will be important that asset value underpinning commercial arrangements promote efficient outcomes and ensure that customer interests are protected.

2.3. Importance of getting an appropriate RCV allocation

In developing the options for this consultation we considered the cost to companies of carrying out a valuation of bioresources assets to inform an appropriate RCV allocation. Discussions with companies, in particular at the [sludge working group](#), welcomed an approach that would allow consistency in valuation method to be established. This would help to avoid the uncertainty and potential cost for companies from a variety of valuation approaches being taken, whilst recognising the range of bioresource technologies that exist.

Companies recognised that sludge asset valuation approaches varied significantly in the past and were not necessarily valued independently of co-located wastewater treatment works. The development of an industry standard template using site size bands and treatment types for costing was suggested, although it was felt that more granular data at site level might be needed given the market context of this valuation exercise. As companies will need data at a site level to complete a template based on size bands, collecting more granular data would not have additional costs.

Another area we explored with companies in advance of this consultation was on what basis to cost assets, including the relative focus on existing assets compared to what would be built in the future to provide the same service. At a [bioresources form of control workshop](#) discussion focused on the merits of an economic value approach that allows companies to use the most relevant data available to them, including from recently built assets, rather than placing over-reliance on older site valuation information. The costs of an economic valuation approach should not be higher than past valuation approaches, including as it does not require the calculation of condition grades based on engineering assessment collected for previous valuations. Considering the economic value of sludge assets is also consistent with a focused valuation for bioresources, rather than the larger cost of valuing a wider set of assets.

The benefits of the approach that we are consulting on is that it allows companies to consider the valuation from the perspective of what RCV allocation is appropriate to the region and customers they serve, using the most relevant information available to them. What is appropriate may vary between company area, so collecting good quality information on the value of bioresources assets in a consistent way will allow us to understand this. Providing us with valuation information in advance of PR19

plans will assist companies in understanding what RCV allocation is appropriate in their business plans.

The legacy RCV allocation will impact on how markets develop. And while it is important to recognise that companies are responsible for setting charges, markets could be distorted and value lost to customers if the RCV allocation is not set at an appropriate level.

If assets are overvalued, the unit price for sludge treatment, recycling and disposal will also be overstated. In the short-term this could increase sludge treatment costs for customers, although this would be offset by a decrease in wastewater network plus wholesale costs. Appointed companies will be disadvantaged compared to new entrants and potentially to other incumbent providers (depending on their costs). In the long-term, inflated asset values may artificially incentivise new companies, such as other organic waste providers and alternative incumbents, to enter the market.

Conversely, if sludge assets are undervalued, the unit price for sludge will be lower, leading to lower charges for sludge wholesale treatment and disposal, offset by higher charges for wastewater network plus wholesale services. Undervaluing assets could result in appointed companies having lower costs than other organic waste (OOW) companies and incumbent water companies could use this to their advantage in competing with OOWs and other incumbents. It could also increase profitability for non-appointed sludge processing and so mean that companies rather than customers benefit from transactions. Companies may have an artificial incentive to sell undervalued assets to capture the actual value of the assets, which may not benefit customers.

The binding price control will constrain the average revenues that companies can recover for the bioresources element of their wholesale charges, but companies will retain responsibility for the individual charges that they set. Companies therefore have an interest in proposing an appropriate allocation consistent with their duties to comply with both charging rules and competition law.

Given the market context for the legacy RCV allocation to bioresources, we expect companies to consider the economic value of their sludge assets. These considerations are different to previous asset valuations of all wholesale assets and the information is for a different purpose. Therefore we will collect sufficient information from companies on their proposed legacy RCV allocation to bioresources in advance of the submission of their PR19 business plans, to be confident that we are in a position to step in to protect customers' interests if required.

In arriving at the proposed legacy RCV allocation at 31 March 2020 it is important that companies:

- Consider the consistency between the RCV allocation and the maintenance of their existing asset base in their sludge investment plans.
- Avoid distorting competition in wider waste markets by the allocation.
- Consider the market value from sale of legacy sludge assets.
- Demonstrate that their proposed RCV allocation avoids undue bill impacts through consistency between wholesale charges and cost recovery, including for trade effluent.
- Recognise that they retain responsibility for competition law compliance irrespective of the RCV allocation.

3. Approach

This section sets out our proposed approach we expect companies to use to value their bioresources assets and to inform their proposed allocation of the legacy wastewater RCV to the bioresources price control.

3.1. Consideration of existing company information

A number of reports commissioned by the sector as part of the Water 2020 “Marketplace for Ideas” considered RCV allocations. Each included the option of using Modern Equivalent Asset Valuation (MEAV), which has been the approach used in utilities and in particular the water sector to value assets for regulatory purposes. [A report from FTI Consulting, commissioned by UK Water Industry Research \(UKWIR\)](#) noted:

“Ofwat defines a Modern Equivalent Asset (MEA) as “a structure similar to an existing structure and having the equivalent productive capacity, which could be built using modern materials, techniques and design. Replacement cost is the basis used to estimate the cost of constructing a modern equivalent asset.” We understand that there is no standard methodology for calculating MEAV across the industry and different companies have updated their estimates of MEAV more recently than others. As a result the MEAV data across the industry may not be comparable.”

As set out in section 2, the objectives of the focused legacy RCV allocation to bioresources are different to past MEAV valuation exercises. For PR09 it was sufficient to check that the economic value implied by the run off of the MEAV was consistent with the long run maintenance of sludge assets, through an overall comparison between expenditure and depreciation. For PR19 the RCV allocation is concerned with providing appropriate price signals to potential new entrants, mitigating the risk that wastewater companies could distort competition in waste markets and recognising the discount within the existing wholesale RCV.

It is important to note that these past valuations did not necessarily lead to comparability between companies in value, with a variety of approaches taken. This was a concern when the main purpose of the comparison was consistency between expenditure and depreciation within a company, but is of greater importance in a market that includes the potential of trading between incumbent companies.

RAG 1.05, which applied until the requirement for companies to prepare annual current cost balance sheets was withdrawn, made it clear that the context of net

value of the tangible assets should reflect what potential competitors would find it worth paying for them, even if the competition was hypothetical.

We have considered if companies could use historic information in order to allocate the RCV, but there are a number of reasons that that this may not provide an appropriate allocation. Apart from the likelihood of inconsistency of information, there has been a substantive change in the technologies and processes used for sludge treatment and disposal. This includes the commercial models, with an increasing role for energy generation as a core part of sludge treatment activities. Available historic information is unlikely to reflect the value that sludge assets now have.

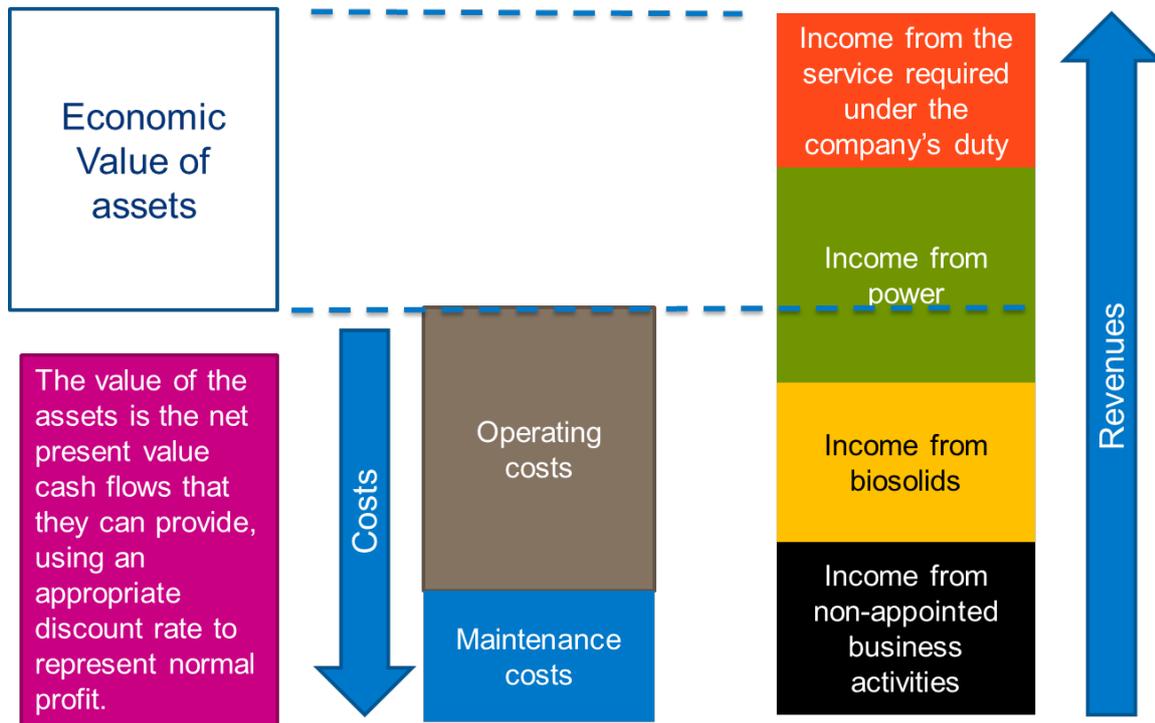
We therefore propose that companies provide information on a consistent basis so that we can set an appropriate allocation for the bioresources price control. In considering how to set the context for companies to approach the valuation in a consistent way we consider that the concept of economic value is of use and is consistent with a level playing field between the incumbent companies and other potential entrants into this sector. We explain this concept briefly below, but it is also set out in Reckon's report that we publish alongside this consultation.

3.2. Proposed approach - economic value

The value of the sludge assets is not simply that they are part of providing an essential role in protecting public health and the environment, but that they can yield value in energy generation and the ultimate biosolids product.

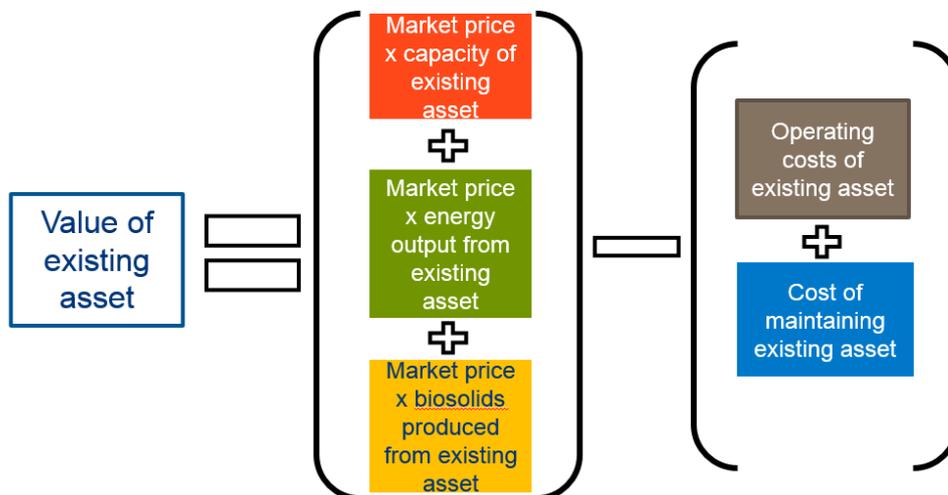
The economic value of an asset can be derived from the income less costs (net income) that an asset generates over time. This is a forward looking concept that fits well with the development of markets. If we adjust the net income by the return that an investor would require to provide capital, we can calculate the present value of future net cash flows. This is a useful measurement of asset value.

Figure 3.1 Economic value of assets



We can also express this in the following way.

Figure 3.2 Equation for the economic value of assets



While it is a useful concept, it is difficult to apply in practice, unless market values are known. In the case of the income that is controlled by the price control this is circular as we want to understand asset value in order to set the price control. However, we

can calculate the minimum price that a new entrant would be willing to accept to build assets and use this, which has a number of advantages.

- It removes the circularity between this valuation method and the price control.
- Reduces the reliance on estimating other market prices.
- It should lead to an allocation of the RCV that will help to provide a level playing field for a new entrant to build new assets to deliver future services in this market.

We consider that this approach will provide an appropriate context for all companies to develop a consistent valuation through the following approach.

1. Estimate the cost of the hypothetical new assets that will deliver the same capacity as actual assets on each site (Gross MEAV).
2. Adjust this value to take account of any difference in the remaining economic life between the hypothetical new assets and actual assets.
3. Adjust this value to take account of any difference in present value terms of any running costs between the old and the new assets over the actual asset life.
4. Adjust this value to take account of any difference in present value terms of any income, other than income directly controlled by the price control, between the old and the new assets over the actual asset life.
5. The result is the net MEAV that reflects the economic value of the actual asset.

This process requires companies to identify the assets a hypothetical new entrant would need to provide the same regulated service at the site on 31 March 2020. We consider that any efficient company would understand the assets required to deliver efficient levels of service and the merits of alternatives approaches. This information could be available from a company's sludge strategy and forward plan.

The most practicable approach is that companies consider a valuation for the bioresources assets at each sludge treatment centre that has bioresources assets. This will enable the income at the site level to be considered in determining economic value. At some sites, such as intermediate thickening sites, it may be unlikely that any additional income would be earned. Therefore the only income that would be generated at this site is the income from providing the intermediate sludge processing service. This assumes a new entrant would build and operate just to provide the service on behalf of the incumbent water company.

The approach described above is similar to an approach included in [RAG 1.05](#). Appendix 3 of Reckon's report sets out alternative approaches to valuation.

The next section sets out step by step why this approach is equivalent to directly calculating the economic value of actual assets from the present value of the net cash flows.

Q1 Do you agree that the focused RCV allocation should be based on the economic value of assets as set out in this section?

If you disagree, please explain what variations to this approach, or alternative approach, you prefer and why it would be more desirable than our preferred approach. Please include in your explanation how it would meet the objectives of the focused allocation of pre-2020 RCV to the bioresources control.

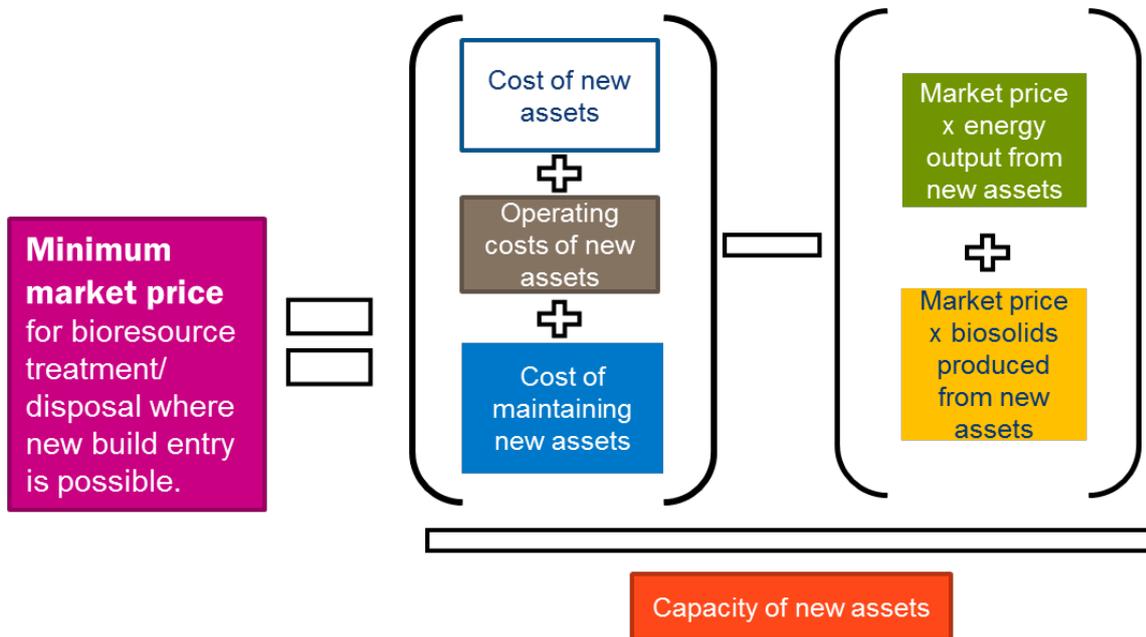
3.3. Reconciliation between proposed approach and a direct calculation of economic value

The proposed approach relies on calculating the minimum price that a new entrant would require to invest in a new asset and assuming that this can be constant in real terms. In the long term this is a reasonable assumption as the benefit of an efficiently operating market is that it should have sufficient market pressure to lead to this minimum price. A new entrant would only invest if the revenues generated less the future costs incurred, or net revenue, will at least equal the cost of the asset taking into account a suitable rate of return.

$$\text{Minimum income required} = \text{cost of asset} + \text{running costs of asset} - \text{other income}$$

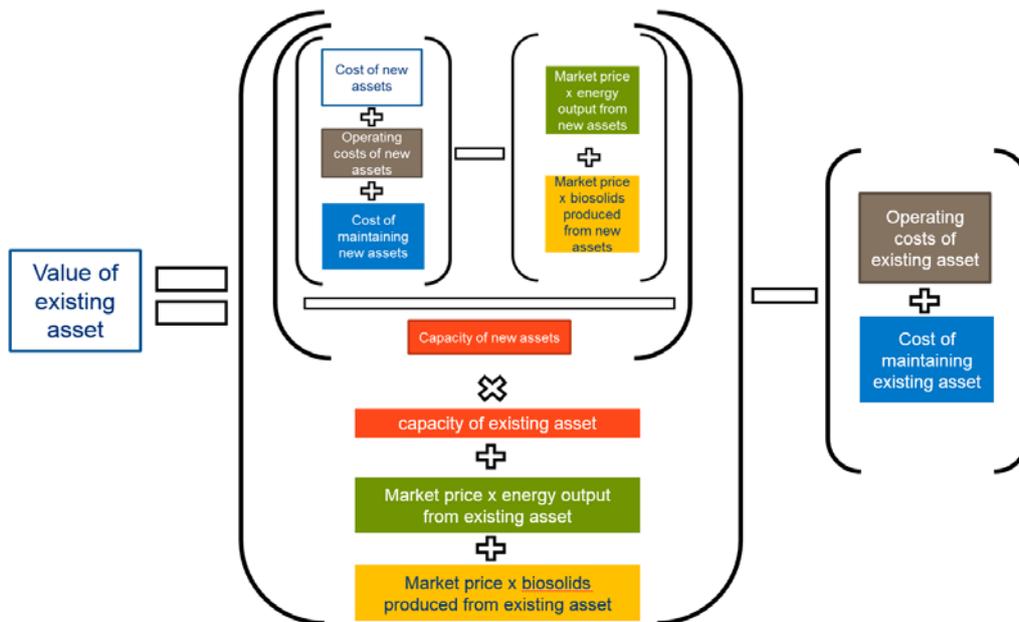
In the case of bioresources the main other income not directly controlled by the price limit is likely to be energy generation and from selling the resulting biosolids. Rearranging the formula and inserting income and costs specific to the bioresources control allow us to identify what the market price would need to be for the regulated service to allow new build entry.

Figure 3.3 Equation for the minimum market price that will support new build entry into the bioresources market for the regulated service



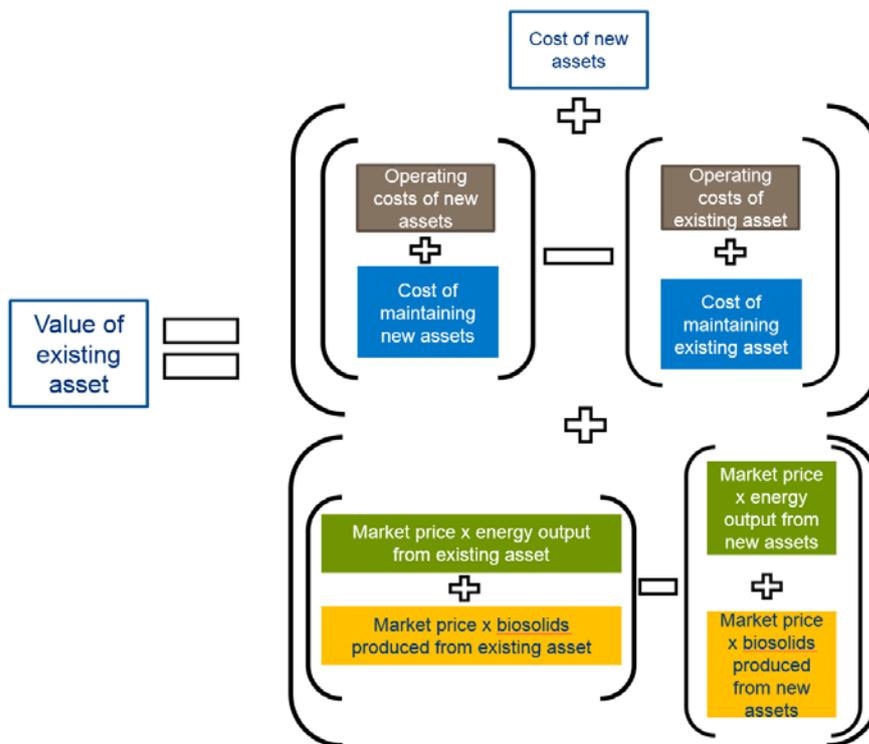
This can be substituted directly in the formula set out in figure 3.2 for the market price for the statutory service.

Figure 3.4 Equation for economic value of assets that does not require the market price for the regulated service



However, if the capacity of the new and the actual assets are the same then these terms cancel.

Figure 3.5 Equation for economic value of assets that does not require the market price for the regulated service if the new and existing assets have the same capacity



Therefore the value of the actual asset can be found from the:

- cost of the new assets, adjusted if there is a difference in remaining life of the actual asset to the new asset;
- difference in present value terms of annual operating and maintenance costs between the new asset and the old asset over the lifetime of the actual assets; and
- difference in present value terms of the income which is not controlled by the price control, between the new asset and the actual asset.

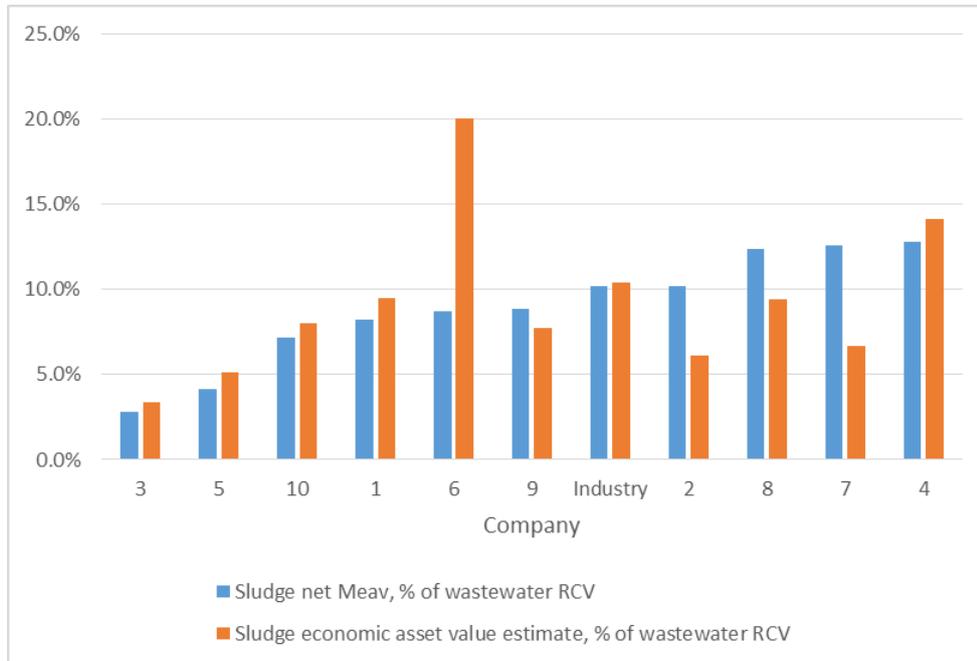
The above calculation assumes that the new asset and the existing asset have the same asset lives. If they are different we need to make an adjustment to take this into account.

3.4. Illustrative comparison of economic value and historic MEAV approach

We have considered the impact that an economic value approach could have compared to past valuations, using information on MEAV provided in regulatory accounts, adjusted for expenditure and depreciation. We compared this to our assessment of possible cost and income sources including income from power.

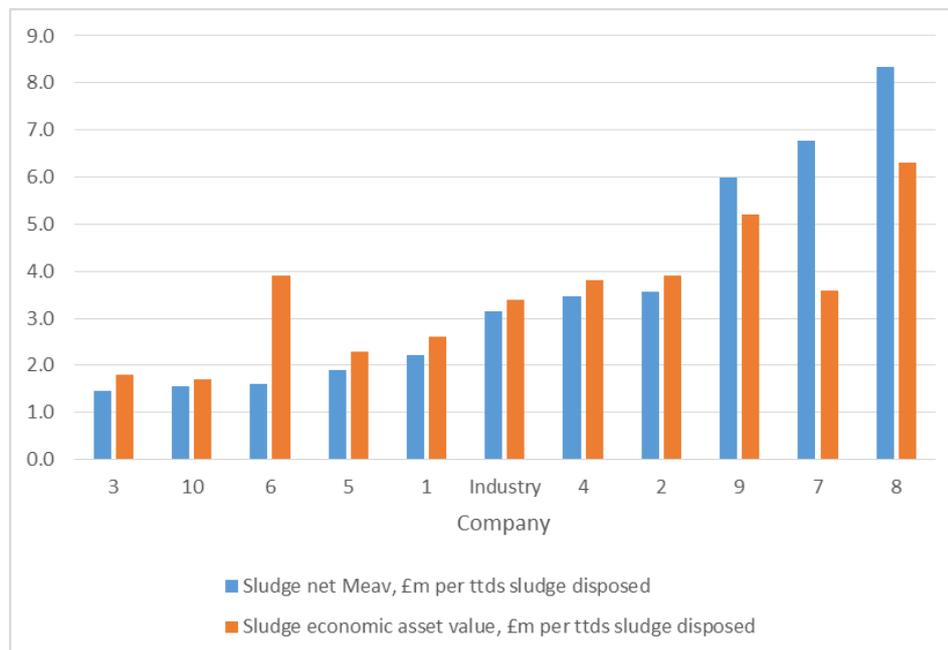
Significant assumptions are required and we place little weight on this analysis as an indication of the appropriate legacy RCV allocation, at this stage - it serves to illustrate the potential impact between the two approaches.

Figure 3.6 Illustrative comparison of allocating the RCV using economic value as opposed to the previous MEAV approach.



Of greater relevance to the future market is the net MEAV and economic value by unit weight of biosolids produced through company sludge assets. This illustrates that companies will need to consider productive capacity of their sludge assets for a forward looking estimate of economic value.

Figure 3.7 Illustrative comparison of RCV per unit from allocating the RCV using economic value as opposed to the previous MEAV approach.



Both approaches show a wide range of asset valuation between companies. This may reflect the different scale of facilities, processes, quality of end bioresources and disposal route. The total industry valuation compared to the existing wastewater RCV appear to be similar for the two approaches. While for individual companies, in some cases, the two valuations are similar, but for others there is divergence. Some companies have high power generation value from their sludge compared to others. This results in a higher value under the economic value approach.

We consider that the transparency of our proposed approach on such issues as the potential of generating energy will lead to appropriate RCV allocations that will help to promote a level playing field, and protects customers compared to an approach that does not fully recognise the wider value of existing assets.

3.5. Cross checks on the RCV allocation

While we propose that companies provide information on MEAV on a site basis, we propose to use this information to check on the consistency of the approach between companies. The RCV allocation will be at a company level.

As well as being important for supporting a level playing field for markets, the RCV allocation could have an impact on wholesale charges. It is important that companies take account of consequences for wholesale charges from RCV allocation.

We therefore expect that companies will perform cross checks to provide assurance that the RCV allocation will not have unintended consequences including that it will not have an adverse impact on customer bills and that it will be consistent with the company setting charges in line with both charging rules and competition law.

Where a company proposes an allocation of the RCV, different from its calculation of economic value, it should explain in detail the rationale for its proposed allocation and how this protects customers and promotes a level playing field for markets.

Q2 Do you agree that companies should consider impact on customers and markets and propose an alternative RCV allocation if this will better protect customers, including by promoting a level playing field for markets?

4. Process

In this section we summarise the step by step process that we propose companies follow to value their bioresources assets and propose an allocation of the RCV for the bioresources control. This process, and the information that companies provide, will allow us to review the consistency of approach between companies and to ensure that customer interests are being protected.

Figure 4.1 Process for companies to propose an RCV allocation



Step 1 – Define the Modern Equivalent

To assess company RCV allocations we will expect companies to clearly set out how they have defined the Modern Equivalent asset. As set out above in section 3, this is the asset that they believe a hypothetical efficient new entrant would build at that location in order to provide the same service. We do not suggest that companies need to speculate or survey potential new entrants to establish this. It should merely reflect what the company would put in place with its own assumptions of what would represent the best economic value for the market they operate without the constraint of the existing bioresources assets on the site.

Companies should identify their assumptions in the context of their strategy for bioresources services. For instance, arrangements for trading with third parties and other WASCs should be considered as part of establishing the economic value for the assets.

Companies should estimate the cost of building the asset on a new build basis. Throughout where we refer to an asset we are referring to the overall site and this could be a combination of assets and processes with a capacity to deliver the same level of service as the actual site, given the inputs they receive and the outputs that are required.

The valuation should include land and the company should have a clear distinction between the land that is required for bioresources and that of other services co-

located on the same site. Companies must keep a record of the allocation of land at sites for the valuation that is then used to allocate the RCV to bioresources.

Where there are choices about the Modern Equivalent that could affect the valuation, companies should set this out and explain which of the alternatives they prefer, and why.

The table below sets our view of the key assumptions that companies should make in defining the bioresources assets being valued:

Table 4.1 – Common assumptions that companies should use in defining the modern asset

Definition	Guidance on assumption
Boundary for assets	<p>For the purposes of RCV allocation companies should use the definition in RAG 4.06.</p> <p>All transfers between intermediate sites should be included within sludge transport. Sludge assets (including storage for blending, mixing and consolidation with imported sludge) should use the 10% de-watering threshold for inclusion within the valuation.</p>
Capacity of facilities	<p>The location, volumes and composition of sludge should be assumed to continue, subject to normal central forecasts and approved plans for changes that are within the company's strategy for bioresources services. The capacity assumed should be sufficient to enable the company to accommodate uncertainty in the forecast of future annual volumes and fluctuations or peaks in volumes within a year.</p> <p>The economic value of spare capacity should be considered, including from mothballed assets. Excess capacity that would not be maintained with the hypothetical new build and has no economic value should be excluded. Adjustments can also be made to the hypothetical new build cost to reflect expenditure would be necessary on process bottlenecks and mothballed assets that exist for the asset. No adjustment should be made where this reflects a backlog at a point in the cycle of normal maintenance for the actual asset.</p>
Location of facilities	<p>The current location and configuration of sites should be assumed to continue, except where the company intends to change configuration as part of specific current or future business plans.</p> <p>Where there is an inefficiency within the existing configuration of facilities, evidence to support an adjustment should be provided.</p>

	The actual transportation assets owned by the appointee should be valued, consistent with the assumption on capacity and location of facilities.
Level of valuation	As far as possible, companies should value sludge assets for each sludge treatment centre. Assets that are at remote thickening sites can be categorised by size band and type. For commonly used assets or allocated assets from other business units, for the purposes of the focussed RCV allocation these should be valued separately where they are not included within individual site cost models.
Sub site processes	As far as possible, companies should cost at a process level, or allocate the valuation to a process level. Companies should set out whether the valuation is at process level or an allocation has been used. A list of the proposed standard processes that all companies should use is set out in the data tables that accompany this consultation.
Choice of technology	Companies should categorise the site against the dominant technology category currently used. Where the Modern Equivalent is different to this technology, this should be noted in the commentary.
Ownership of assets	Companies should not value assets that are not owned by the appointed business. This includes those owned by associated and non-appointed businesses and those owned by third parties where activities are outsourced. Where the hypothetical new build includes assets not owned by the appointed business, an adjustment would be made between the gross and the net value to reflect this (reflecting the difference in economic value).
Treatment of sludge liquors	The value should assume no change to the existing treatment of sludge liquors. Where the hypothetical new build asset results in a change in the sludge liquor treatment cost of the network plus business and companies can identify this, an adjustment would be made to reflect the existing arrangements for the net valuation.

Reckon provide in their report a number of scenarios for how companies should establish the hypothetical new build asset that may help to illustrate the assumptions in the above table

Q3 Do you agree that the assumptions in table 4.1 are appropriate for companies to use for the valuation exercise? We welcome any comments on these assumptions; suggestions of further assumptions you consider all companies should use; or requests for clarification. If you disagree that any of the above assumptions are appropriate to be used by all companies please explain why and if relevant suggest an alternative.

Step 2 – Establish the gross MEAV

Some companies will have made recent investment in their assets using a modern technology. For others, they may be successfully optimising revenue and costs through using their existing assets. However, in all cases the company level RCV allocation should reflect the economic value of those assets, which may raise different issues to the use of MEAVs in previous regulated price controls.

To approximate for this, companies should estimate their costs for the asset processes for the Modern Equivalent. Companies should be clear about data and assumptions underpinning their view of Modern Equivalent and should provide this evidence to Ofwat as part of their valuation.

For this exercise companies should forecast the economic value of their sludge assets as at 31 March 2020. Where companies base their valuation based on the actual assets as at 1 April 2017, they will need to roll forward to 31 March 2020 with forecast expenditure and run off of depreciation.

The Reckon report considers a wide range of issues that should assist companies in establishing the valuation of the sludge assets. Reckon also highlight that it is important that a consistent approach between companies is taken to the valuation. However, given the variety of sludge assets and the potential for differing sludge strategies between companies, there may be scope for variations in approach between companies. We will need to test the appropriateness of company approaches when we review company estimates of the economic value of their bioresources assets.

Given the nature of sludge assets, companies should consider separately the economic value and the assumptions they have used that arises from:

- Energy generation and renewable energy incentives for bioresources;
- Bioresources end product value (e.g. sale as fertiliser to agriculture); and
- Transport and treatment of sludge treatment and disposal, including third party waste.

The RCV allocation that companies propose should reflect the value for the appointed bioresources activities for the company as a whole. For the purposes of the valuation exercise we expect companies to estimate the economic value components of Sludge Treatment Centres (STCs), and allocate the revenue streams including energy, bioresources end product value and third party income to this. This reflects the approach of establishing the hypothetical new build asset for each STC, and then adjusting this to reflect the actual assets and differences in the economic value such as from operating and maintenance costs and revenues.

Companies will therefore also need to include in the valuation other assets that contribute to sludge transport, treatment and disposal, including:

- Sludge assets at satellite waste water treatment works.
- Vehicles and other plant involved in sludge transport and disposal.
- A share of management and general assets where the principal use is within the sludge business unit.
- A share of other assets that the sludge business relies on where the principal use is in other business units.

Step 3 – Reflect the current assets

The gross value of the company's sludge assets needs to be adjusted to reflect the economic value of the current assets that will be owned by the company on 31 March 2020. These adjustments should, as far as possible, reflect differences in economic value to the hypothetical new build costs that have been assumed. There are a number of reasons to consider adjustments including:

- The existing assets will have different age profiles and remaining economic lives than the new build assets.
- Where assumptions have been made on the maintenance and operating costs of the new build asset, adjustments should be made to reflect differences to what the existing assets are already delivering.
- Where companies identify what revenues (e.g. from energy generation and from bioresources end product) would be generated from the hypothetical new build assets, adjustments should be made to the net value to reflect the existing potential revenue generation from the actual assets. Companies should clearly set out how they have arrived at market prices in making any adjustment.

Adjustments should take into account the economic value concept. The impact that this has on differences in asset age is set out in the section below. Other adjustments (differences in revenues and ongoing costs), need to be made in present value terms and so discounted over the remaining economic life of the existing asset.

We summarise below our suggested approach that companies should take to a number of the valuation issues. Where companies can justify taking an alternative approach, they should highlight this and explain why.

Table 4.2 – Common assumptions that companies should use in valuations

Valuation issue	Suggested approach
Land Values	<p>Land should be valued based on a hypothetical new build basis. Where companies do not have site specific estimates for the market value of their actual sites, companies could consider using the standard value for industrial land published by DCLG. This is consistent with the assumption that the assets would be based on the existing site configuration, rather than greenfield.</p> <p>Adjustments can be made to reflect the existing assets where this occupies a different area of land compared to the hypothetical new build. Companies should keep a record of the allocation of land reflected in the economic value of the actual assets.</p>
Shared services and management and general	<p>The valuation should include an efficient element of construction cost overheads and management and general overheads in site costing. In addition, companies should also include in the sludge asset valuation a proportionate allocation of other business assets that would be required by a separate sludge business, such as central IT infrastructure, HR and finance systems, head office buildings and other assets which the sludge business may be indirectly benefit from, but for which the sludge business use is not the principal user of the asset.</p> <p>Assets primarily used by the sludge business but not part of the sludge process site costing (e.g. vehicles) should be included within the sludge valuation. Adjustments to recognise any shared use of other business units should be stated clearly in the narrative accompanying the submission.</p>
Work in progress	<p>This should be included at cost in the valuation. This would form an adjustment to the existing assets as the company with new site processes would assume that this was the same as the hypothetical new build.</p>
On costs	<p>Companies should identify what costs are included in any cost models and how construction and other overhead costs that are not included have been incorporated</p>
Grants and contributions	<p>No adjustments should normally be made to the net value for historic grants and contributions as they are not relevant to the forward looking economic value, except where the hypothetical new asset would attract a grant or contribution.</p>
Infrastructure assets	<p>Infrastructure assets should be valued on the basis of a new build construction cost. The overall economic value adjustment for the site could be used to establish the net value of the infrastructure assets, given their relatively low value within the sludge business unit. We do not think companies need to identify infrastructure assets separately from non-infrastructure assets for the purposes of valuation for the RCV allocation.</p>

Discount rate to be used in the economic value calculation	For the purposes of the September 2017 submission companies should use the PR14 real weighted average cost of capital of 3.6%. Companies in their commentary should test the sensitivity of the valuation to this assumption on the sludge valuation. For the purposes of sensitivity testing we propose that a WACC increment of - 0.5% (ie 3.1%) should be used.
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In addition companies will find supporting information in Reckon’s report that accompanies this consultation helpful in considering the valuation of their assets.

Reflecting the economic lives of existing assets

Companies should set out the average age and remaining economic life assumptions for each sub-category of non-infrastructure assets. Companies may have a variety of ways of understanding the economic life, but we consider the most robust could rely on a condition based approach, rather than the remaining accounting life which may be a conservative estimate.

In previous valuation exercises companies have often used straight line depreciation to reflect differences in asset life.

Net MEAV = Gross MEAV * (remaining asset life / (age + remaining asset life)).

This approach was appropriate for the context of previous asset revaluations, in particular understanding current cost depreciation and conducting an overall comparison of expenditure and depreciation to ensure customers paid an appropriate amount. The current regulatory framework does not require such a comparison.

Whilst understanding the age and asset condition of the sludge assets is still relevant, companies should not automatically apply this approach. Understanding the discounted forward-looking economic value of the actual assets in terms of their operating costs, cost of maintaining the capacity and product quality and revenue generated compared to the hypothetical new build asset is our preferred approach.

Companies should consider the mix of the different sludge asset lives within this assessment. In past valuations companies often considered the civil, M&E and ICA assets separately. Transport and IT equipment should also be considered separately.

Reckon have provided guidance on how to derive overall economic lives from individual elements. This requires an understanding of the values of the elements,

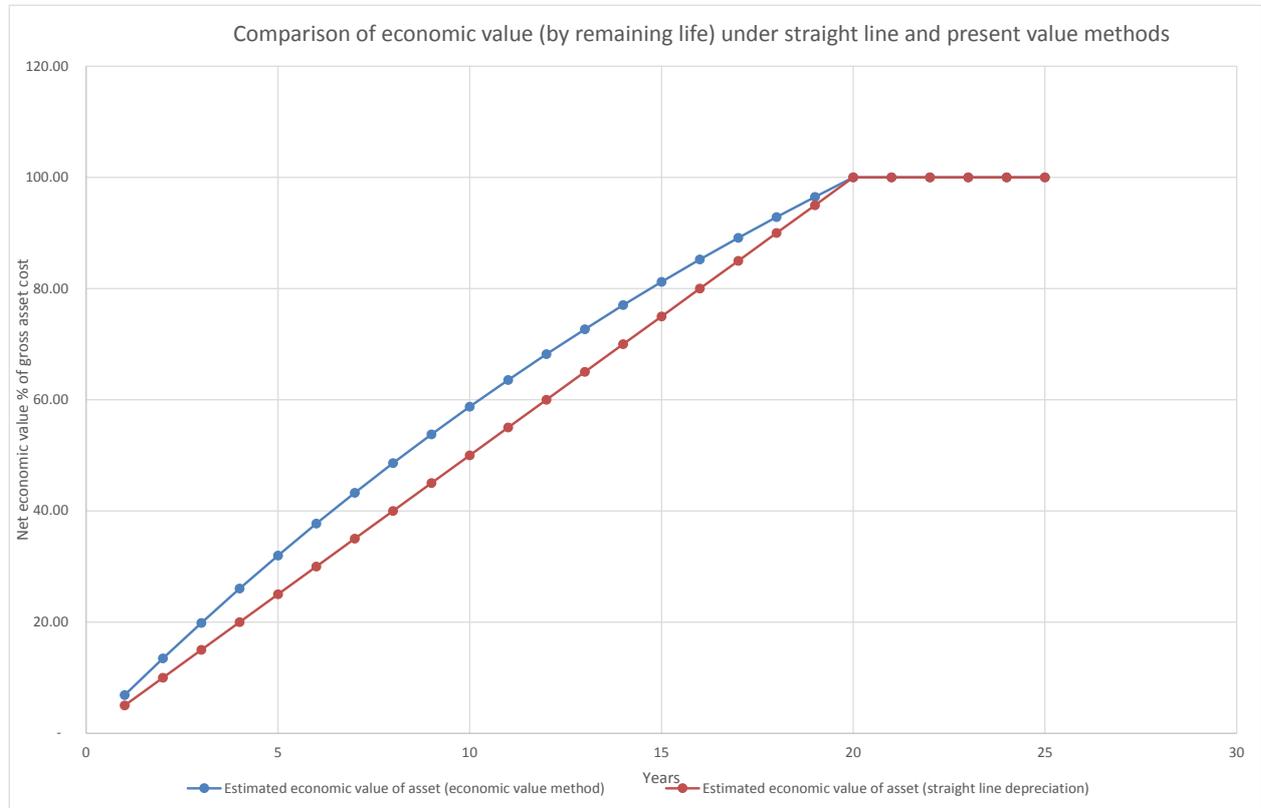
although this could be a relative amount, for example a percentage of the overall value. As the value of assets is the aim of the exercise this potentially adds a level of circularity. Therefore it is worth avoiding this if possible. Therefore:

1. If the processes of the existing asset can be mapped directly to the processes of the hypothetical asset and there is no need to understand average asset life to make any other adjustments for differences in cost or income, then adjustments for asset age should be done at this granular level.
2. In other circumstances either,
 - a. determine at a site level the economic life. Adjustments to the economic value of the existing assets in this case are required to take account of elements that have a different asset life. Elements with lower asset lives would lead to a negative adjustment to take account of the extra maintenance costs and any elements that have longer asset lives require a positive adjustment to reflect the residual resale/scrap value, or
 - b. the values of the elements, which could be relative values, should be used as weights to calculate an average weighted asset life.

Where companies establish a hypothetical asset that has a different economic life to their existing assets, they will need to make adjustments between the gross cost of the hypothetical asset and the net value of the existing assets in a way that is consistent with the economic value concept.

Where the existing asset has a different economic asset life to the hypothetical asset, there is a risk of undervaluing the existing asset if straight line depreciation is assumed when calculating the net value. This is illustrated in the diagram below:

Figure 4.2 – Comparison of adjustment to economic value to take account of economic life of existing assets under straight line and present value adjustment methods



In the example above the hypothetical asset has a life of 20 years. For the short cut in the absence of market prices we are effectively assuming that the construction cost of the assets would reflect the economic value, with the discount rate of the future revenue stream reflecting the return. The adjustment to reflect differences in the economic value of the existing assets and differences in its remaining life from the 20 years of the hypothetical asset needs to be reflected in the net economic value. If straight line depreciation is used, this does not recognise that hypothetical asset and actual asset both existed in the most recent years, and would only produce the same economic value over 20 years as the approach using discounted present values. This could represent a misallocation of the value over the time.

Therefore, in order to reflect the economic value, differences in age between the hypothetical and existing asset should reflect the proportion of the discount rate over the asset life. This reflects that the existing asset will remain in use at the time period closest to the point of valuation. So in the diagram above, an adjustment to reflect an existing asset with a remaining economic life of 10 years would have c58% of the gross construction cost of the hypothetical asset with a 20 year life, rather than 50%.

If companies propose linking their run off of their 2020 RCV to the remaining life of their existing assets, this would still appropriately use straight line depreciation over the remaining life of the asset, in this example 10 years. Given the purposes of the RCV allocation, we anticipate that straight line depreciation rather than a reducing balance approach will be appropriate to the run off of the historic bioresources RCV.

Table 4.3 Illustrative example of adjusting the gross MEAV to reflect the actual assets

Step	Value
a. New construction cost of process A of hypothetical new asset with a life of 11 years.	£10m
b. New construction cost of process B of hypothetical new asset with a life of 23 years.	£30m
c. = a. + b. Total hypothetical cost of sludge treatment centre	£40m
d. Asset life of hypothetical asset (weighted according to construction cost)	20 years
e. Sum of present value factors over 20 years for hypothetical asset at 3.6%. (Practically this can be found by a present value calculation with a single unit of value in each future year.)	14.33 (where year 1 is $1/(1+3.6\%)$) and subsequent years are previous year / $(1+3.6\%)$)
f. Sum of present value factors over 10 years remaining life for actual asset at 3.6% (Practically this can be found by a present value calculation with a single unit of value in each future year.)	8.42
g. = f / e. Adjustment factor to reflect remaining life of existing asset	58.8%
h. Annual additional operating and maintenance costs and lower revenues from existing asset compared to hypothetical	£0.1m

Step	Value
i. Discounted present value of h. over 10 years of remaining life of actual asset	-£0.84m
j. = i. / c. Adjustment factor for differences in operating and revenue costs	-2.1%
k. = g. + j. Net economic value of existing sludge treatment centre assets as proportion of hypothetical new build cost	56.7%
l. = k. * c. Economic value of sludge treatment centre	£22.7m (implied RCV run off of £2.27m over 10 years remaining life from 2020)
m. net asset valuation of intermediate sites, management and general and transport assets	£3m
n. Total sludge asset economic value proposed for historic RCV allocation	£25.7m

In their report Reckon raise further potential refinements to the adjustment for actual assets that could better reflect their economic value. These include differences in the profile of income streams due to assets degrading over time; variations in prices and costs over time; and adjustments that could reflect uncertainty of assumptions. We do not propose that as standard companies make adjustments to reflect these matters. These would require a degree of complexity, which we do not consider necessarily lead to a more robust valuation. In particular we do not think that the absence of these adjustments will lead to a systemic bias. We welcome stakeholders' views on this.

Q4 Do you agree that the assumptions in table 4.2 are appropriate for companies to use for the valuation exercise? We welcome any comments on these assumptions; suggestions of further assumptions you consider all companies should use; or requests for clarification. If you disagree that any of the above assumptions are appropriate to be used by all companies please explain why and if relevant suggest an alternative.

Step 4 – Consider alternative approaches

Rather than relying on a single approach to the asset valuation, companies may want to take account of information from alternatives to this approach.

Whilst we are proposing to collect data at site level, this is for the purpose of ensuring that companies approach valuation consistently across the industry. The RCV allocation will be a total for the company, rather than being linked to the individual site. The cross checks and alternative approaches that companies consider therefore can also be considered at a higher level than individual processes or sites.

One cross check that is likely to be relevant is for companies to explain how the valuation has moved compared to the previous full revaluation carried out at PR09. The [CEPA targeted review](#) provides a useful analysis for companies to consider. Our analysis of the PR09 submissions has identified the following inconsistencies:

- Companies took a range of approaches to how they defined the modern equivalent asset. A few assumed standard advanced digestion technology and may have applied this consistently across the sites. Other companies valued the existing processes at each site.
- Most companies valued the processes (in terms of capacity and product) rather than the individual assets. Most companies used costs curves, in some cases supplemented by third party information prepared by cost consultants. Standard industry cost models were used where companies did not have sufficient data. A few companies engaged consultants to undertake specific costing exercises to establish a unit cost against capacity and sense checked this against the costing models.
- One company took a hypothetical approach to valuation based on design standards rather than directly referencing the existing assets on the site.
- A range of approaches were taken for valuing land. In some cases it was not allocated to sludge treatment centres separate to sewage treatment works. Some companies used a separate inventory of land and others used a standard percentage of the other GMEAV costs.
- Some companies indexed asset values and cost models using RPI, whilst others used COPI.
- Some companies established the net value in relation to book life and age, whilst others made explicit assessments of asset condition in order to establish the remaining life and the Net MEAV.

The approaches and availability of data saw a range of accuracy grades being applied to the asset valuation, varying from +/- 5% to 25% of the reported total.

Therefore we think that while the PR09 valuation provides a valuable reference point, it is important that the RCV allocation to bioresources control represents a forward looking economic valuation of the assets. Current valuations will be more relevant for more recent sludge assets.

Companies can cross check the valuation against the post privatisation expenditure and depreciation on sludge assets. Similarly, the more recent the expenditure, the more relevance that companies can place on statutory accounts cost and depreciation information. Companies should also consider whether there are any asset types or lives where the statutory account book life is inconsistent with the age and remaining life of the remaining assets. The accounting life information will be more useful where there is no systematic inconsistency on average with the existing assets in use, even where at an individual sites there may be assets still in use that have no remaining statutory book life. The profile of maintenance and enhancement expenditure at a site may mean that the site has been substantially renewed, even where some asset types such as civils appear life expired in statutory accounts.

However, companies will need to consider any issues with the reliability and accuracy of their measurement of tonnes of dry solids of sludge. Currently tonnes of dry solids are not measured in all locations and are frequently estimated. Companies will need to consider the reliability of scaling information where they are considering cross checks between the valuation information from different sources or between sites.

Companies will need to consider in their business plans the link between the RCV allocation and the maintenance of their existing asset base in their sludge investment plans. The level of maturity and certainty of their sludge strategies will inform how useful explaining the proposed RCV allocation against historic and future maintenance investment may be. For this submission, we expect that companies will:

- Reflect the expected development of bioresources markets.
- Protect customers of bioresource and network plus businesses by not transferring value from customers to companies, such as through changes in wholesale charge structures and avoiding undervaluation of assets in the more competitive bioresources business.
- Be transparent on assumptions and approaches to allow Ofwat to scrutinise company proposals proportionately.
- Demonstrate that valuation is consistent with evidence on the economic value of the sludge assets.

Companies do not need to base their valuation on the cost of existing assets, or provide condition data, where companies provide assurance and evidence to support

their hypothetical new build definition and costings. Where companies use alternative approaches to their proposed RCV allocation, we still expect companies to set out the information on the economic value of the assets using the valuation approach set out in this guidance. The adjustment lines in the tables, either at site or in total as appropriate can be used for companies to include their proposed RCV allocation, with an explanation for these adjustments in their commentary.

Existing asset costing should be provided by companies as a cross check (with an alternative set of tables where necessary), if companies believe there is a material difference to an economic value basis that affects their proposed RCV allocation.

The table below summarises some of the issues companies could consider as cross checks or alternative approaches in arriving at their proposed RCV allocations.

Table 4.4 – Potential cross checks and alternative approaches to RCV allocations

Cross checks and alternative approaches to RCV allocation	Issues for companies to consider
Roll forward of PR09 valuation	Companies can consider a roll forward of the 2014-15 Net MEAV (based on the full revaluation of assets carried out at PR09). This comparison is a useful cross check, but would need consideration of the limitations of the valuation and the change in context
Gross MEAV approach to RCV allocation	This would not reflect an appropriate approach to a focused allocation of the RCV to the bioresources price control
Splitting pre-privatisation assets at a discount to the RCV and post privatisation assets at full value	This is particularly relevant if all or most sludge assets have effectively been replaced since privatisation. However, this may be difficult to calculate given changes to asset records and accounting classification since privatisation
Historic expenditure	Depending on the data and how new the assets are, this information may provide a useful cross check
Projected expenditure – e.g. proportion of future expenditure expected on bioresources assets	Future maintenance expenditure could be compared to the proposed net value and remaining life of the assets as a cross check
Net MEAV	Comparing an approach based on the valuation of the existing assets and their remaining life to a hypothetical new build adjusted for differences in economic value will be a useful cross check
Averaged or hybrid approaches	In arriving at the RCV allocation, the choice between different approaches should consider the wholesale charge structure impacts

Q5 Do you have any further suggestions of potentially useful cross checks, beyond those presented in table 4.4 that companies may want to consider?

Step 5 – Propose and explain approach

Having information that is robust helps everyone build trust and confidence in the sector. To accompany the valuation the companies should provide a comprehensive narrative which will aid our understanding and allow for proportionate scrutiny of company submissions.

We provide below a non-exhaustive list of elements that company should cover that accompany the specific information we request in section 7.

Table 4.5 – Non-exhaustive list of elements companies should explain to support their proposed RCV allocation.

No	Item
1	A clear explanation of the approach taken to the valuation
2	A rationale of the valuation approach and how it satisfies the guidance document
3	A clear explanation for how the economic value of the assets has been assessed, both how the hypothetical new asset has been defined and adjustments made to reflect the life and differences in economic value for the actual assets . A commentary for the submission tables, cross-referenced to supporting evidence may be useful.
4	An explanation of the sources of asset cost, asset life and operating cost and revenue information, and the degree of confidence that companies have in this data.
5	An overview of the Sludge assets should be provided: This should include: <ul style="list-style-type: none"> • An asset description • Site and capacity information
6	Land values should be separately disclosed and approach to valuations explained.
7	An overview of the Sludge processes for each site should be provided
8	Where applicable an explanation for “on-costs” , which have been added to project values, should be provided. This, is not limited to, and could include: <ul style="list-style-type: none"> • Project Overheads (project management, central overheads, etc.) • Risk and contingencies applied • Any Preliminaries • Design and Management Factors • Any commercial settlements arising from disputes
9	An explanation of the assurance procedures undertaken.
10	A description of the cross checks that the company has considered and the sensitivity of the proposed allocation to the approach taken. Companies should confirm that they have followed the specific expectations set out in this guidance. Explanation of how the impact on wholesale charges, including trade effluent, has been considered should be included. Where appropriate the explanations should be supported with evidence
11	The company should set out its proposed RCV allocation taking into account all of the above.

We will determine the RCV allocation to bioresources (and therefore to wastewater network plus) as part of PR19 final determinations after companies have had an opportunity to address any issues when they submit their business plans and our comments on the allocation in our PR19 draft determinations

We consider that the information and data we propose to collect from companies in this consultation is reasonably required for us to set a separate price control for bioresources. Companies have agreed to a licence modification that will allow us to set such a separate price control at PR19. Licence conditions require companies to provide us with information that we reasonably require to enable us to set price controls.

We will take into account assurance (including Board assurance) that companies provide in support of their proposed RCV allocation in deciding what level of scrutiny is proportionate for this information. Our scrutiny will inform our decisions at PR19 and our view on the quality of company plans.

5. Timetable

Our proposed timetable to allocate the RCV is set out below.

Table 5.1 Timetable for the bioresources RCV allocation

When	What
31 March 2017	Consultation closes on draft guidance
Late April 2017	Final guidance published
29th September 2017	Companies to submit bioresources valuation and RCV allocation and assurance information to Ofwat. This will allow us to give feedback and ultimately help companies in providing a high quality business plan. We are also considering if companies should publish valuation information on their websites to allow other stakeholders to comment on their proposals
January 2018	Ofwat provide companies with feedback on their valuation and proposed RCV allocation
3 September 2018	Companies consider feedback from Ofwat and revise information as appropriate in their business plans. We will set out the requirements for companies alongside our methodology statement in December 2017 together with the other requirements for business plans
July 2019	We will propose the allocation of the RCV to the bioresources control as part of our draft determination
December 2019	We will confirm the allocation of the RCV to the bioresources control as part of our final determination

Q6 Do you have any comments on our timetable?

6. Requirements for information to be provided by 29 September 2017

This section sets out the requirements for the information we propose companies provide on its valuation and proposed RCV allocation by 29 September 2017.

We have decided to request information in advance of PR19 business plans for two purposes:

- It will help avoid issues in companies' business plans that could not easily be foreseen by companies which if they existed would reduce the quality of the business plan which ultimately would not be in the interests of customers.
- Asking for this information that is required for price setting early will help to reduce the demands on both companies and us in the peak of PR19 process.

Guidance for the information that we propose to collect is set out in section 4 and the tables that will collect specific information are described in section 7 below.

Companies should provide a named contact for any queries in relation to the submission.

Assurance of the sludge valuation submission is important given the variation in the approach and the quality of information provided by companies for the full asset revaluation carried out at PR09. The change in context for this valuation as a focused allocation of the RCV also requires a wider range of considerations for companies that requires Board assurance

In the table below we provide our view on the assurance that companies categorised as self-assurance under the company monitoring framework should provide on their submission.

Table 6.1 – Expected assurance for September 2017 submission

No	Assurance Item
1	A statement signed the Board that the valuation approach and proposed RCV allocation is supported by the Board. The assurance statement should set out that the data tables and supporting information are accurate and that material assumptions have been exposed. The statement should confirm that the approach taken reflects the guidance provided by Ofwat and should set out any areas where an alternative approach has been taken, and why this is. The statement should set out the assurance information that the Board has considered in making this statement. It should also note any weaknesses or uncertainty found in providing this data and how this will be rectified.
2	We expect that companies will want to provide any evidence from independent reviews of the approach, information or data that supports the assumptions made in the submission. This could include: <ul style="list-style-type: none"> • Assurance on the source of costing and supporting information used to support the calculation of economic value.

	<ul style="list-style-type: none"> • Assurance on the quality of underlying data used to support this costing information. • Assurance on the asset data appropriate to the source. For engineering estimates this may include assurance on the procedures for these estimates. For underlying data sources this should include reliability of information extracted from source systems, including underlying accounting records.
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In addition to the signed statement above,

- Companies in the targeted category must set out how it considered whether external independent assurance was required for each of the areas set out in table 6.1, or further areas that the company identifies as having a significant risk of impacting its calculation of economic value. Any reports provided by a third party should be provided.
- A company in the prescribed category of the company monitoring framework must provide external independent assurance on each of the areas set out in table 6.1 and for any further areas that the company identifies as having a significant risk of impacting its calculation of economic value. It must provide copies of the reports provided by independent third parties.

We will take into account the quality of the assurance that companies provide regarding their information and the confidence we can place in the data provided when completing our assessment of the company monitoring framework.

Q7 Do you have any comments on our assurance expectations?

Publication of information

We are considering what, if any, information it would be helpful for companies to publish on their websites to allow other stakeholders to comment on their proposals. Other stakeholders may be well placed to identify issues that would also help to lead to high quality business plans. On the other hand, publication of information may be commercially sensitive and undermine the development of the bioresources market. We understand that there will be a range of potential concerns on publication of data and we are keen to understand views on this topic.

If other stakeholders have the opportunity to comment on companies' proposals it may help to increase our confidence in them.

Q8 Do you agree that companies should publish information on their websites to allow other stakeholders to comment, and when this could happen?

Q9 At what level of detail do you think that this information should be published at? Please comment as to what you consider the benefits or disadvantages to companies publishing information at a site level?

7. Data tables

Current cost asset values were collected in the regulatory accounts up to 2014-15. Since the introduction of the annual performance report we have not collected any asset information on an annual basis.

This valuation exercise will require more detailed information than was collected in the regulatory accounts. Asset information was collected at PR09 and PR14, some elements of this are repeated in this exercise.

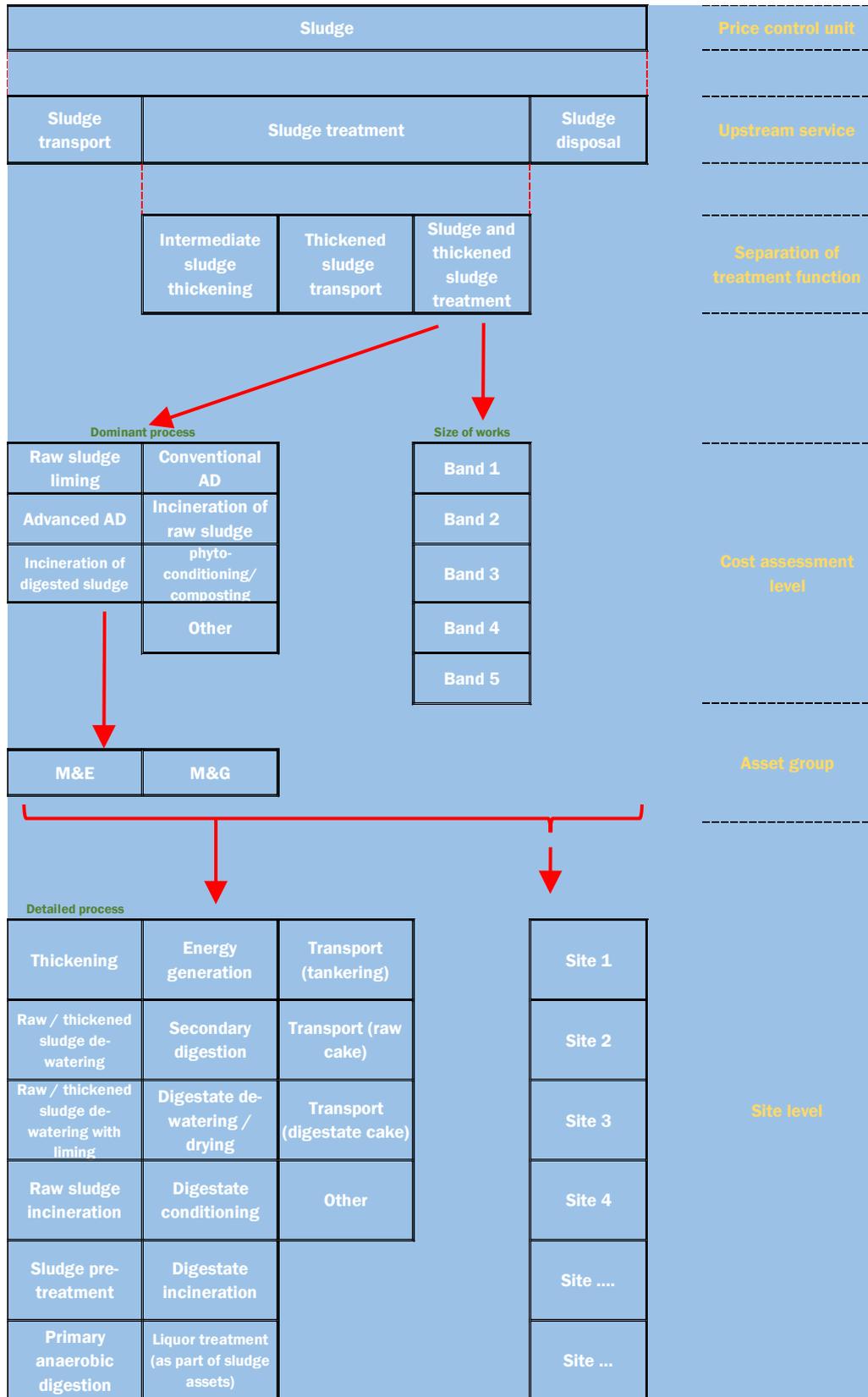
However, for bioresources, the information needed is at a more granular level than that collected in business plans submitted at previous price reviews. We intend to collect information on a site by site level. We are also taking into account the size of works and the treatment types used at each works. Although the data we are collecting is granular, it would have to be summarised from source records in any case.

However, it is important that the boundaries that have been developed for PR19, and are used in the APR for 2016-17, are repeated for this data. Therefore we need data at the most granular level to reconcile back to the level of reporting seen in the annual performance report, in particular the operating expenditure and capital expenditure data in table 4E (which shows costs at the 'upstream service' level).

This will give confidence that the granular data has been extracted from the same source data that populates the annual performance report.

The following diagram shows how the hierarchy of data flows from the annual performance report down to the granular site based data.

Figure 7.1 Hierarchy of data flows



Our proposed data tables are summarised below:

Table 7.1 Proposed data tables

Table	Purpose
1 Summary - RCV	<p>This table contains the economic value for bioresources (described for this purpose as net MEAV) and the company view of the allocation of the wastewater RCV at 31 March 2020 to the bioresource and wastewater network plus controls.</p> <p>Companies are required to forecast additions and disposals to roll the MEAV value back to 31 March 2017, using forecast data for additions consistent with their current expenditure plans and capital maintenance charges consistent with their approach to table 4G of their Annual Performance Report.</p> <p>If companies do not have sufficient data to calculate the economic value of sludge assets at 31 March 2020, they should complete a valuation at 31 March 2017 and use the forecast additions and depreciation lines to arrive at the net MEAV.</p>
2 Summary – MEAV	<p>This table contains information to roll forward the last reported MEAV value from the 2015 regulatory accounts through to the new valuation at 31 March 2017.</p> <p>Here the MEAV is split between the treatment functions and the management and general (M&G) element is separated from this. M&G should include allocations for principal use values from non-sludge business units.</p> <p>Block A should be completed in nominal prices. Block B and C should be completed in March 2017 prices.</p>
3 – Site detailed data – sludge thickening plants	<p>Site level data for thickening plants including the land and M&G element of the MEAV.</p> <p>MEAV data should be completed in March 2017 prices. 2015-16 and 2016-17 data should be completed in nominal actual prices, consistent with the equivalent lines as defined in the Annual Performance Report sections 2 and 4. Companies should not duplicate expenditure with data reported for Sludge Treatment Centres.</p> <p>The actual asset age and actual asset remaining life should reflect a weighted average by GMEAV. Companies should set out how they have calculated or recorded this information. Companies should also set out any adjustments to the proposed remaining life. These lives should be as at 31 March 2020 consistent with the GMEAV estimates, or 31 March 2017 if companies are unable to do this.</p> <p>Companies should focus the economic value adjustments on the Sludge Treatment Centre sites. We do not require companies to establish a hypothetical asset for sludge thickening plants that are separate to Sludge Treatment Centres. Operating costs and revenues</p>

Table	Purpose
	<p>from intermediate thickening sites that differ because of the hypothetical STC should be adjusted through the STC value. A similar approach applies to differences in transport assets. Therefore the valuation for intermediate sludge thickening plant and vehicles should be based on company costing for a modern equivalent asset and is unlikely to need adjustments for economic value differences to actual assets, other than reflecting the estimated remaining life of the actual assets.</p> <p>Energy consumption, sludge volumes and population equivalent data should be consistent with Annual Performance Reporting and cost assessment submission data for 2015-16 and 2016-17.</p> <p>Companies should include the name and location of the sludge thickening site.</p>
<p>4 – Site detailed data – sludge treatment centres</p>	<p>The data for sludge treatment centres includes the same definitions as table 3.</p> <p>The dominant process should reflect the process that best describes the bulk of the sludge treatment volumes for the actual assets forecast to be in place at the sludge treatment centre on 31 March 2020 from:</p> <ul style="list-style-type: none"> • Raw sludge liming • Conventional Anaerobic Digestion • Advanced Anaerobic Digestion • Incineration of raw sludge • Incineration of digested sludge • Phyto conditioning / composting • Other <p>Size band should be based on sludge volumes produced:</p> <p>Band 1: < 5 ttds</p> <p>Band 2: 5 to <10 ttds</p> <p>Band 3: 10 to < 20 ttds</p> <p>Band 4: 20 to < 30 ttds</p> <p>Band 5: 30 ttds and above</p> <p>The total GMEAV should match the total for each sludge treatment centre on the 6 – Inputs sheet. The Net MEAV should match the total on the 7 – Calculations sheet.</p>

Table	Purpose
5 - Site detailed data - reconciliation to table 4E 'Sludge treatment'	This table reconciles the operating and capital expenditure data collected in tables 6 and 7 to table 4E of the published annual performance report.
6 – Inputs	<p>This table contains the valuation information, Companies should complete a column for each Sludge Treatment Centre and include non-site assets in the additional column. Intermediate thickening site assets are captured in table 3.</p> <p>Block A: Includes the name of the site. Companies should also list the processes at the site for the actual and hypothetical new assets, using the number references in column A:</p> <ol style="list-style-type: none"> 1. Thickening 2. Raw / thickening sludge de-watering 3. Raw / thickening sludge de-watering with liming 4. Raw sludge incineration 5. Sludge pre-treatment 6. Primary Anaerobic digestion 7. Energy generation 8. Secondary digestion 9. Digestate de-watering. drying 10. Digestate conditioning 11. Digestate incineration 12. Liquor treatment (as part of sludge assets) <p>Block B contains the capacity of the existing asset processes. The units represent the output of that process. The actual asset is the current asset except where there are specific approved plans where this will be different by 31 March 2020.</p> <p>Block C contains the assumed capacity for the hypothetical new build asset. This will normally be the same as Block B, except whether bottlenecks or the nature of the asset requires a different hypothetical capacity.</p>

Table	Purpose
	<p>Block D contains the forecast average throughput / volumes, as a comparison to the total capacity in Blocks B and C.</p> <p>Block E contains the gross cost (excluding land) for the hypothetical new asset. Companies should explain the basis for the choice of asset. Companies should include the full cost (including on-costs) at process level. Where allocation to processes from cost data sources has been necessary, this should be fully explained.</p> <p>Block F contains the cost to be deducted from the hypothetical asset for assets that do not currently form part of the appointed business i.e. non-appointed assets.</p> <p>Block G contains the new built asset life for the hypothetical asset. Where this is weighted between different asset lives, companies should set out the weighting factor used and explain this, particularly where this is not based on the Gross cost.</p> <p>Block H contains the remaining economic life of the actual processes. This input as a cross check should reflect the actual assumed remaining life, or a calculation from asset records. Where this is weighted between different asset lives, companies should set out the weighting factor used and explain this, particularly where this is not based on the Gross cost.</p> <p>Block I contains the age of the appointee assets existing processes. Where this is weighted between different asset lives, companies should set out the weighting factor used and explain this, particularly where this differs from the approach used for block G and H.</p> <p>Block J shows the NPV adjustments to the economic value of the actual sludge assets for age and remaining life. This should be calculated from the proportion of the asset life for the actual assets compared to the life of the hypothetical asset. Where the actual asset life is different from the hypothetical asset life, this should be based on the proportion of discount factors rather than on a straight line depreciation basis. The calculation of these adjustments should be set out in a commentary and supporting spreadsheet calculations could also be provided.</p> <p>Block K can be applied instead of Block I as it applies the age and remaining life adjustment for the actual assets at site rather than process level. For each site, only one of Block I or Block J should be completed, with the other input as zero.</p> <p>Companies can adjust the calculations in blocks H/I and J to reflect their RCV allocation proposals, using supporting information to justify their proposals.</p> <p>Block L shows the NPV adjustments to the economic value of the actual sludge assets for factors other than actual asset age and remaining life. This could be calculated as the discounted difference over the remaining life of the actual asset between the costs and revenue differences between the hypothetical and the actual assets.</p>

Table	Purpose
	<p>The calculation of these adjustments should be set out in a commentary and supporting spreadsheet calculations could also be provided.</p> <p>Block M contains land valuation proposals and adjustments between hypothetical and actual assets.</p> <p>Block N sets out adjustments for any assets or land that are included in the hypothetical asset but should not form part of the economic value of the appointed business.</p> <p>Block O contains other adjustments to the valuation. Block K includes information on the operating costs and revenues (annual average in March 2017 prices) that have been calculated for the hypothetical and actual asset. This should be consistent with the calculation of the hypothetical and actual asset adjustments. Any material differences from the actual reported data for 2015-16 and 2016-17 should be explained.</p>
7. Calculations	<p>This table contains calculations of the economic value from the tables in section 6. The totals should be reconciled to the values used in tables 1-4. We have left it open to companies to propose their own valuation on tables 1-4 after considering cross checks, whilst still completing 6. Inputs and 7. Calculations sheets using a consistent approach based on the information companies have available.</p>

All data in the tables should be completed in March 2017 prices, except for actual 2015/16 and 2016/17 data which should be entered in actual nominal values.

Q10 Do you have any comments or require any clarification on the proposed tables? Where you have alternative proposals, please set out how this meets the objectives of the asset valuation for the purposes of allocating the legacy wastewater RCV to the bioresources control.

8. Responding to this consultation

We welcome any comments or representations on our proposals. Please make clear what you consider the impact would be of your representations on other interested parties. Please send written responses by close of business on **31 March 2017**.

You can email your responses to rcv.allocation@ofwat.gsi.gov.uk or you can submit your responses by post to:

Water 2020
Ofwat
Centre City Tower
7 Hill Street
Birmingham B5 4UA

We intend to publish all written responses that we receive on our website alongside our final approach to allocating the RCV to the new bioresources control.

If you would like the information you provide to be treated as confidential, please be aware that, under the Freedom of Information Act 2000, there is a statutory ‘Code of Practice’ with which public authorities must comply and which deals, among other things, with obligations of confidence.

In light of this, it would be helpful if you could explain why you regard the information you have provided as confidential. If we receive a request for disclosure of the information, we will take full account of your explanation, but we cannot give an assurance that we can maintain confidentiality in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, in itself, be regarded as binding on us.

Information provided, including personal information, may be published or disclosed in accordance with access to information legislation - primarily the Freedom of Information Act 2000, the Data Protection Act 1988 and the Environment Information Regulations 2004.

At a minimum, we would expect to publish the name of all organisations that provide a written response, even where there are legitimate reasons that the contents of those written responses remain confidential.

Consultation questions

Q1 Do you agree that the focused RCV allocation should be based on the economic value of assets as set out in section 3?

If you disagree, please explain what variations to this approach, or alternative approach, you prefer and why it would be more desirable than our preferred approach. Please include in your explanation how it would meet the objectives of the focused allocation of pre-2020 RCV to the bioresources control.

Q2 Do you agree that companies should consider impact on customers and markets and propose an alternative RCV allocation if this will better protect customers, including by promoting a level playing field for markets?

Q3 Do you agree that the assumptions in table 4.1 are appropriate for companies to use for the valuation exercise? We welcome any comments on these assumptions; suggestions of further assumptions you consider all companies should use; or requests for clarification. If you disagree that any of the above assumptions are appropriate to be used by all companies please explain why and if relevant suggest an alternative.

Q4 Do you agree that the assumptions in table 4.2 are appropriate for companies to use for the valuation exercise? We welcome any comments on these assumptions; suggestions of further assumptions you consider all companies should use; or requests for clarification. If you disagree that any of the above assumptions are appropriate to be used by all companies please explain why and if relevant suggest an alternative.

Q5 Do you have any further suggestions of potentially useful cross checks, beyond those presented in table 4.4 that companies may want to consider?

Q6 Do you have any comments on our timetable?

Q7 Do you have any comments on our assurance expectations?

Q8 Do you agree that companies should publish information on their websites to allow other stakeholders to comment, and when this could happen?

Q9 At what level of detail do you think that this information should be published at? Please comment as to what you consider the benefits or disadvantages to companies publishing information at a site level?

Q10 Do you have any comments or require any clarification on the proposed tables? Where you have alternative proposals, please set out how this meets the objectives of the asset valuation for the purposes of allocating the legacy wastewater RCV to the bioresources control.