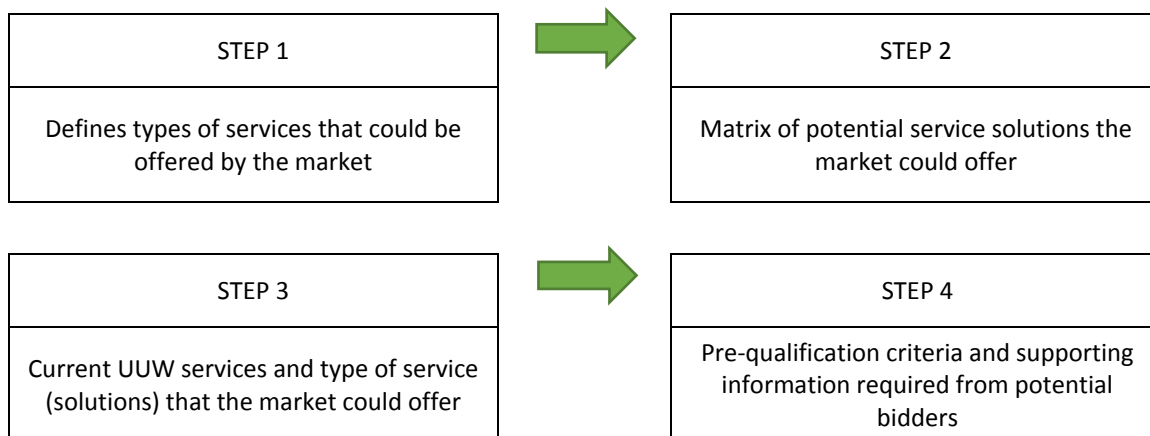


1.0 Bioresources Evaluation Criteria

When a proposal for Bioresources is submitted, it will be assessed in four steps:



1.1 STEP 1: Overview of Bioresources services

| Sludge | Raw Sludge Transport |
|---------------|-----------------------------------|
| Liquid Sludge | Collection and delivery by tanker |
| Cake | Collection and delivery by tipper |

| Sludge | Pre-Treatment |
|---------------|---|
| Liquid Sludge | Preparation (raw sludge not co-located) |
| Cake | |

| Sludge | Treatment |
|---------------|---------------------|
| Liquid Sludge | Treating raw sludge |
| Cake | |

| Sludge | Energy Production |
|---------------|-------------------------------|
| Liquid Sludge | Energy generation from biogas |
| Cake | |

| Sludge | Disposal |
|---------------|--|
| Liquid Sludge | Dispose of residues from treatment or raw sludge |
| Cake | |

Bid Assessment Framework



1.2 STEP 2: Matrix for services that could be offered – Green possible options for services (single or combinations)

| Sludge | Raw Sludge Transport | Pre-Treatment | Treatment | Energy Production | Disposal | |
|--------------------------------|--|--|---------------------------|---------------------|--------------------------|---|
| Raw Sludge (Liquid or Cake) | 1 | Collection and delivery by tanker / tipper | | | | |
| | 2 | | Preparation of raw sludge | | | |
| | 3 | | | Treating raw sludge | Energy production | |
| | 4 | | | | Energy production | |
| | 5 | | | | | Collection and disposal of biosolids |
| | 5a | | | | | Biosolids disposal |
| | 5b | | | | | Raw sludge disposal |
| | 6 | Collection and delivery by tanker / tipper | Preparation of raw sludge | | | |
| | 7 | | Preparation of raw sludge | Treating raw sludge | Energy production | Residuals from treatment or direct disposal |
| | 8 | | | Treating raw sludge | Energy production | Residuals from treatment or direct disposal |
| | 9 | Collection and delivery by tanker / tipper | | | | Direct disposal |
| 10 | Collection and delivery by tanker / tipper | Preparation of raw sludge | | | Direct disposal | |
| 11 | Collection and delivery by tanker / tipper | Preparation of raw sludge | Treating raw sludge | Energy production | Residuals from treatment | |

1.3 STEP 3: Current U UW service & type of service that could be offered:

Bid Assessment Framework



| Sludge | Raw Sludge Transport | Pre-Treatment | Treatment | Energy Production | Disposal |
|---------------|---|--|--|--|---|
| Liquid Sludge | <p>Current U UW operation: Liquid sludge is collected in tankers. Most common size if 28m³.</p> <p>Collection of liquid sludge using a compliant tanker from a Wastewater Treatment Works (WwTW) and delivery to facility for pre-treatment or treatment.</p> | <p>Current U UW operation: Thickening to increase dry solids (DS) and remove contaminants with output being thickened liquid or cake.</p> <p>Other alternative solutions:</p> <ul style="list-style-type: none"> • Removal of contaminants, e.g. new screening / processing techniques to remove contaminants • Drying and pelletising raw sludge for onward treatment or disposal | <p>Current U UW operation: Sludge treatment using Anaerobic Digestion (AD) and Advanced AD (AAD). Produces biogas for energy production, biosolids recycled / disposed of to land; and liquors for treatment.</p> <p>Other alternative treatment solutions, e.g.:</p> <ul style="list-style-type: none"> • Bioconversion | <p>Current U UW operation: Biogas produced and used in CHP engines for heat and power production; and biomethane production.</p> <p>Other options for biogas to energy;</p> <ul style="list-style-type: none"> • Different primary movers, e.g. fuel cells • Biogas to green hydrogen • Biogas to biomethane / transport | <p>collection, transport and agricultural services for biosolids cake produced from AD/AAD</p> <p>Post Treatment Solid Residue, e.g. biosolids</p> <ul style="list-style-type: none"> • Drying/pelletising biosolids from AD/AAD* • Incin. of AD/AAD biosolids • ATT of AD/AAD biosolids <p>*undergo drying/pelletising with output disposed of to land or used onward use as a fuel.</p> <p>Direct disposal services for raw sludge, e.g.:</p> <ul style="list-style-type: none"> • Incineration of raw sludge • Advanced thermal treatment (ATT) |
| Cake | <p>Current U UW operation: Raw cake produced by Bioresources is transported using tippers which are typically move 25 tonnes per load.</p> <p>Collection of sludge cake using a compliant tipper vehicle from a raw cake production operation (Bioresources) and delivery to</p> | | | | |
| Notes | <p><i>The scope for transport excludes the transfer of raw sludge where U UW wastewater operations are co-located with Bioresources processing operations. This transfer operation is through pumping the sludge from the wastewater operations to the Bioresources operations.</i></p> | <p><i>The scope of service is to take raw sludge and process to improve quality for onwards treatment and/or disposal.</i></p> | <p><i>A provider could offer a solution comprising treatment only or treatment with disposal. A treatment only service where U UW need to manage residual materials, e.g. biosolids would need to be assessed to determine if U UW or other service provider can provide the required downstream service. There are a wide range of potential treatment solutions that could be considered at differing levels of technical maturity</i></p> | <p><i>A provider could offer to take biogas from existing AD operations and process this to produce energy outputs and earn revenue from this. Therefore biogas would be sold to the service provider by U UW</i></p> | <p><i>Services for disposal can be for raw sludge (which has not been treated) and residual outputs from treatment, e.g. biosolids. There a wide range of potential solutions at differing levels technical maturity</i></p> |

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1.4 STEP 4: PRE_QUALIFICATION CRITERIA (based on matrix of service options shown above)

| Service Offered | Criteria 1 (Capacity) | | | | | | | Criteria 2 (Compliance) | | | | | | | Criteria 3 (Proximity) | | Criteria 4 (Financial) | | | Additional Information Required | | | | | | | | | | | | | | | | | | |
|---|-----------------------------|-----------------------------|---------------------|-------------------|---------------------|--------------------------------|----------------------------------|-------------------------|-----------|--------------------|------------------------|---------------------------------------|--------------------------------|---|---|--------------------|------------------------|---|---|---------------------------------|--------------------|-------------------------|-----------------------------|---------------------|--------------|-----------------------------|------------------------------------|---------------------------------|---------------------|--------------------------|------------------------|----------------------|---------------------------|--------------------------|---|---|---|---|
| | | | | | | | | Existing | | | | Proposed | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Tanker Volume Moved per Day | Tipper Volume Moved per Day | Throughput (liquid) | Throughput (cake) | Biosolids processed | Throughput for disposal (cake) | Throughput for disposal (liquid) | Licensed | Permitted | Safety Performance | Compliance Performance | Meet Biosolids Assurance Scheme (BAS) | License applied for - in place | Permitting underway / submitted / awarded | Planning underway / submitted / awarded | Safety Performance | Compliance Performance | Location for Tanker Deliveries (Raw Sludge) | Location for Tipper Deliveries (Raw Sludge) | £/day (per tanker) | £/day (per tipper) | £ per TDS of raw sludge | £/Nm ³ of Biogas | £/TDS for biosolids | Vehicle Type | Fuel Proposed for Transport | Specification for sludge feedstock | Description of proposed process | Technology maturity | Specification of Outputs | Guarantees for Service | Duration for Service | Date Service can Commence | Restrictions for Service | | | | |
| <i>Footnote</i> | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | | | | | | | | | | | |
| Transport collection and delivery by tanker / tipper (raw sludge) | Y | Y | | | | | Y | Y | Y | Y | | Y | | | Y | Y | Y | Y | Y | Y | Y | | | Y | Y | Y | Y | | Y | Y | Y | Y | Y | Y | Y | | | |
| Preparation of raw sludge (liquid or cake) | | | Y | Y | | | | | Y | Y | Y | | | Y | Y | Y | | Y | Y | | | Y | | | | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | | |
| Treating raw sludge | | | Y | Y | | | | | Y | Y | Y | Y | | Y | Y | Y | | Y | Y | | | Y | | | | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | | |
| Energy Production | | | | | Y | | | | | | | | | | | | | | | | | Y | | | | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | | |
| Collection and disposal of biosolids | | | | | | Y | Y | Y | Y | Y | | Y | Y | | | | | | | | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | | |
| Disposal of biosolids (UUV transport to location) | | | | | | Y | | | Y | Y | Y | | | Y | Y | Y | Y | | Y | | | Y | | | | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Disposal of raw sludge (UUV transport to location) | | | | | | Y | | | Y | Y | | | | Y | Y | Y | Y | | Y | | | Y | | | | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Transport and pre-treatment of raw sludge | Y | Y | Y | Y | | | Y | Y | Y | Y | | Y | Y | Y | Y | | Y | Y | | | Y | | | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Preparation, treatment and disposal | | Y | Y | | | | | | Y | Y | Y | Y | | Y | Y | Y | Y | Y | Y | | | Y | | | | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Treatment and disposal | | | | | | Y | Y | | Y | Y | Y | Y | | Y | Y | Y | Y | Y | Y | | | Y | | | | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Transport raw sludge and disposal | Y | Y | | | | Y | Y | | Y | Y | Y | | | Y | Y | Y | Y | Y | Y | | | Y | | | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Transport, preparation of raw sludge for disposal | Y | Y | | | | Y | Y | | Y | Y | Y | | | Y | Y | Y | Y | Y | Y | | | Y | | | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Transport, preparation of raw sludge, treatment and disposal | Y | Y | Y | Y | | | Y | Y | Y | Y | | Y | Y | Y | Y | Y | Y | Y | Y | | | Y | | | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |

**The indicative volumes have been revised and the numbers appears to be reasonable. However, if in the future we have got a number of bids below this level, we may amend this indicative table.

1.5 Evaluation:

At the first stage of the BAF United Utilities will follow this template to evaluate the individual proposals:

| Footnote | | Value | Units | Indicative UUW Cost, £/yr* | *UUW comments |
|--|----|-------|-------|----------------------------|---------------|
| <i>Tankers per Day</i> | 1 | | | | |
| <i>Tipplers per Day</i> | 2 | | | | |
| <i>Throughput (liquid)</i> | 3 | | | | |
| <i>Throughput (cake)</i> | 4 | | | | |
| <i>biogas processed</i> | 5 | | | | |
| <i>Throughput (liquid) for disposal</i> | 6 | | | | |
| <i>Throughput (cake) for disposal</i> | 7 | | | | |
| <i>Licensed</i> | 8 | | | | |
| <i>Permitted</i> | 9 | | | | |
| <i>Safety Performance</i> | 10 | | | | |
| <i>Compliance Performance</i> | 11 | | | | |
| <i>Meet Biosolids Assurance Scheme (BAS)</i> | 12 | | | | |
| <i>Licenses applied for - In place</i> | 13 | | | | |
| <i>Planning underway / submitted / awarded</i> | 14 | | | | |
| <i>Permitting underway / submitted / awarded</i> | 15 | | | | |
| <i>Safety Performance</i> | 16 | | | | |
| <i>Compliance Performance</i> | 17 | | | | |
| <i>Location for Tanker Deliveries (Raw Sludge)</i> | 18 | | | | |
| <i>Location for Tipper Deliveries (Raw Sludge)</i> | 19 | | | | |
| <i>Location for Tipper Deliveries (Biosolids)</i> | 20 | | | | |