Member of the SNC-Lavalin Group

Bracknell AD Feasibility Study

Addendum

Bracknell Forest Council

07 December 2021

Notice

This document and its contents have been prepared and are intended solely as information for Bracknell Forest Council and use in relation to Consultancy Services

Atkins Limited assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

This document has 15 pages including the cover.

Document history

Document title: Addendum

Document reference: P:\GBEMF\PDG\PC\BRACKNELL FOREST COUNCIL\Projects\5205840 - Minor Works 2021\104 - AD Plant

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
1.0	Draft for comments	TP	RL, RW	GM	SG	15/10/2021
2.0	Update for comments	TP	GM	GM	SG	25/10/2021
3.0	Final	RW				07/12/2021

Client signoff

Client	Bracknell Forest Council
Project	Bracknell AD Feasibility Study
Job number	5205840
Client signature/date	

Contents

Tables

1. Introduction

Bracknell Forest Council (BFC) is interested in the potential to use the food waste collected from BFC, Reading and Wokingham Councils and produce biogas. Atkins was commissioned by BFC to undertake a high-level Feasibility Study into the technical viability of a number of options including a potential development of its own Anaerobic Digestion (AD) plant. The intended purpose of the plant would be to treat collected food waste from approximately 47,000 households, that is currently disposed of through the re3 partnership with Wokingham and Reading Councils. 19,000 tonnes of food waste per year is the current collection expectation for 2021/22 for the combined total of the three councils. As part of phase 1, an assessment of three strategic options was investigated looking at the advantages and disadvantages of the following three options:

- Continue with current contract.
- Build own AD plant.
- Public/private partnership - collaborate with a third party

Lastly, an optioneering study assessing three different AD process configurations was performed, designed to inform BFC of the most desirable process option to employ in a scenario where the council decides to build their own AD plant. These AD process configurations were:

- Option 1: Anaerobic Digestion with Electricity to Grid
- Option 2: Anaerobic Digestion with Biomethane to Grid
- Option 3: Anaerobic Digestion with Biogas Export to Third Party

Following the completion of phase 1, BFC instructed Atkins to conduct a risks and opportunities matrix for the three process configurations with the aim to better inform BFC and its stakeholders. This report is an addendum to the original Feasibility Study.

2. Process description

Table 2-1 summarises the key characteristics of the three process configurations in question based on information acquired from phase 1 for a 19,000 tonnes per annum (tpa) Anaerobic Digestion (AD) facility. Note that the high-level estimates presented below should be treated as indicative values. The estimates are equivalent to an AACE class 4 estimate. AACE describes the estimate accuracy as follows:

Typical accuracy ranges for Class 4 estimates are -15% to -30% on the low side, and +20% to +50% on the high side, depending on the technological complexity of the project, appropriate reference information, and other risks (after inclusion of an appropriate contingency determination). Ranges could exceed those shown if there are unusual risks.

Table 2-1 - Key characteristics of process configurations for a 19,000tpa AD plant

	AD + electricity	AD + biomethane	AD + biogas
Process description	Mesophilic conditions (25-45˚C) producing biogas with a typical CH_4 content of 60% combined with a gas engine unit for the generation of electricity and heat. The electricity can be exported to the grid and the heat can be used to maintain the digester's temperature at the required levels.	Mesophilic conditions (25-45˚C) producing biogas with a typical CH_4 content of 60% combined with a gas upgrading system converting the biogas to a highly concentrated biomethane product (>97%). The produced product is then injected into the gas grid system.	Mesophilic conditions (25-45˚C) producing biogas with a typical CH_4 content of 60%. The biogas then can be exported to a third party for further treatment and conversion to a final product such as biomethane, electricity and/or heat.

Main stream of revenue	Electricity	Biomethane	Biogas
Electricity Potential	18-22 MWh_e/day 0.75-0.9 MW_e	0 MW_e – Assuming all biomethane is exported	0 MW_e – Assuming all biogas is exported
Typical site layout and space requirement	9,755m^2 (0.9755 hectares)	7,953m^2 (0.7953 hectares)	7,556m^2 (0.7556 hectares)
Typical Capex	£9m	£8.7m	£7.6m
Typical Opex	£254,000/year	£368,000/year	£254,000/year
Typical revenue potential	£453,000/year	£1.4m/year	£351,000/year

As a comparison, for a 50,000 tonnes per year anaerobic digestion plant the equivalent assumptions would be as presented in Table 2-2. It should be highlighted that no further assessment has been conducted for a 50,000 tonnes per annum AD plant. The table presented below serves purely as a comparison against a 19,000tpa AD plant. The cost estimates are equivalent to an AACE class 4 estimate.

Table 2-2 - Key characteristics of process configurations for a 50,000tpa AD plant

	AD + electricity	AD + biomethane	AD + biogas
Process description	Mesophilic conditions (25-45˚C) producing biogas with a typical CH_4 content of 60% combined with a gas engine unit for the generation of electricity and heat. The electricity can be exported to the grid and the heat can be used to maintain the digester's temperature at the required levels.	Mesophilic conditions (25-45˚C) producing biogas with a typical CH_4 content of 60% combined with a gas upgrading system converting the biogas to a highly concentrated biomethane product (>97%). The produced product is then injected into the gas grid system.	Mesophilic conditions (25-45˚C) producing biogas with a typical CH_4 content of 60%. The biogas then can be exported to a third party for further treatment and conversion to a final product such as biomethane, electricity and/or heat.
Main stream of revenue	Electricity	Biomethane	Biogas
Electricity Potential	48-57 MWh_e/day 2-2.4 MW_e	0 MW_e – Assuming all biomethane is exported	0 MW_e – Assuming all biogas is exported
Typical site layout and space requirement	25,672m^2 (25.672 hectares)	20,929m^2 (20.929 hectares)	19,883m^2 (19.883 hectares)
Typical Capex	£22.5m	£21.5m	£19m
Typical Opex	£891,000/year	£1.2m/year	£890,000/year
Typical revenue potential	£1.2m/year	£3.3m/year	£1m/year

3. Scope of work

Atkins scope is to conduct a risk and opportunities analysis of the three process configurations as presented in phase 1 with the aim to better inform BFC and its stakeholders on their decision-making process for which option is the most feasible.

4. Risks and opportunities matrix

Sections 4.1 to 4.3 present the risks and opportunities for each of the options. The risks and opportunities have been assessed based on the following parameters:

- Footprint
- Carbon and climate impacts
- Operational complexity and staffing
- Planning and permitting requirements
- Availability of the asset
- Markets for outputs
- Plant references
- CAPEX
- OPEX
- Revenue potential
- Required tonnage of feedstock
- Water and wastewater requirements

However, it should be noted that this is not an exhaustive list of risks and opportunities for each option. The risks and opportunities are limited based on the above parameters and it is purely a qualitative analysis. In some cases the risks and opportunities were categorised on a comparative basis whereas in others they were categorised on a standalone basis.

4.1. Option 1 – AD with Electricity to Grid

Table 4-1 lists the risks and opportunities for option1 – AD with electricity to grid.

Table 4-1 – Risks and Opportunities matrix for option 1

Opportunities	Risks
Plant references: AD combined with a CHP unit is a mature and proven technology with numerous reference plants ranging from a few kW to MWe. Hence, it is expected that there will be a plethora of contractors with the expertise and experience to construct an AD plant combined with CHP.	Footprint: It would typically require the largest footprint compared to the other two options due to the CHP unit and hence lead to higher relevant risks.
OPEX: Based on a high-level assessment it was estimated that it would have the lowest OPEX (and similar to option 3) compared to option 2.	Carbon and climate impacts: From an environmental perspective, option 1 would emit GHG emissions as a consequence of the biogas combustion within the plant's boundary which are discharged to the atmosphere.
Markets for outputs: Option 1's key outputs would include electricity and digestate. Both products have a mature and well-established market.	Operational complexity and staffing: Due to the relative complexity of the operation of the AD and CHP unit, the complexity of operation and therefore staffing is expected to be slightly higher compared to option 3 and similar to option 2, incurring medium relevant risks.
	Planning and permitting requirements: Option 1 would require lengthier planning and permitting approval processes as it would include air emission limits from the combustion of biogas in the CHP engine. This means medium delay and development risks from this aspect.
	Availability of the asset: Typically, the availability of a plant is determined by the maturity and complexity of the technology used. Considering that all technologies are considered mature, the complexity is the key parameter. An AD plant tends to have an availability of 95% whereas

	the CHP unit typically has 92%. Hence, it is the CHP unit that determines the plant's overall availability. Option 1 and option 2 are considered to have similar availabilities with the limiting factor being the CHP unit.
	Required tonnage of feedstock: Based on a high-level assessment, option 1 would have the second highest CAPEX after option 2 but would be eligible only for wholesale electricity price. In our view the financial viability of this option is considered as high risk with the current assumptions as the revenues from the wholesale of electricity is not considered adequate to cover the capital expenditure and annual operational costs. However, a cost benefit analysis would be essential to confirm the above statement and determine the required tonnage necessary for making the project feasible from a financial perspective.
	Revenue potential: It would not be able to meet CfD's capacity threshold of 5MWe and would not be eligible to bid in a CfD auction which is the only financial incentive currently available for AD plants with power generation. Hence, the only stream of revenue would be the wholesale of electricity to the grid or a 3rd party. Risks to revenue security are considered as high.
	CAPEX: Based on a high-level assessment conducted by Atkins, it was estimated that it would have the highest CAPEX compared to option 2 and 3, hence incurring medium development and commercial risks

4.2. Option 2 – AD with biomethane to grid

Table 4-2 lists the risks and opportunities for option 2 – AD with biomethane to grid.

Table 4-2 – Risks and Opportunities matrix for option 2

Opportunities	Risks
Footprint: It would require the second largest footprint compared to the other two options due to the biogas upgrading system. However, its footprint can be considered almost similar to option 3 which would translate to lower capital cost for the purchase or lease of the site and likely better site availability.	Operational complexity and staffing: Due to the relative complexity of the operation of the AD and biogas upgrading unit, the complexity of operation and therefore staffing is expected to be slightly higher compared to option 1 and similar to option 2.
Carbon and climate impacts: From an environmental perspective, option 2 could be considered the most environmentally friendly as CO_2 emissions could be recovered and sold to a third party (such as a beverage producing company) making the facility to emit almost zero emissions.	Opex: Its Opex would be the highest compared to the other two options partially due to the need to purchase propane to enrich the biomethane before it is injected into the natural gas grid and partially due its complex process, leading to medium commercial risks.
Planning and permitting requirements: Option 2 is considered the second least complex technology from a planning and permitting perspective and similar to option 3. This is mainly due to the lack of any combustion process which would need air emission limits as part of the planning and permitting conditions.	Availability of the asset: Typically, the availability of a plant is determined by the maturity and complexity of the technology used. Considering that all technologies are considered mature, the complexity is the key parameter. Option 2 is considered to have similar availability with the limiting factor being the biogas upgrading unit and thus a medium risk.

Markets for outputs: Option 2's key outputs would include biomethane and digestate. Both products have a mature and well-established market.	CAPEX: Based on Atkins' high-level estimations, Option 2 has the highest CAPEX due to its complexity although the cost may be reduced as the demand is expected to be increased due to financial incentive for this type of configuration. A factor that has not been taken into account is the gas grid connection cost with the local gas grid network operator as this tends to be very site specific. The relevant commercial risk is estimated as high.
Plant references: AD combined with a biogas upgrading unit is a mature and proven technology with an increasing number of reference plants in the UK as a response to the support schemes currently available. Hence, it is expected that there will be sufficient number of contractors with the expertise and experience to construct an AD plant combined with biogas upgrading system.	
Revenue potential: The AD with biomethane to grid plant would produce biomethane which would be eligible for financial incentives such as Green Gas Support Scheme (GGSS) or Renewable Transport Fuel Obligation (RTFO). In addition, the plant would benefit from the wholesale price of gas to the grid and potentially from the export of CO_2 to the beverage industry market.	
Required tonnage of feedstock: Based on a high-level assessment, option 2 would have the highest CAPEX but also eligible for the most revenue streams (GGSS and/or RTFO and wholesale gas). In our view that would be the most financially viable option. However, a cost benefit analysis would be essential to confirm the above statement and determine the required tonnage necessary for making the project feasible from a financial perspective.	

4.3. Option 3 – AD with biogas to third party

Table 4-3 lists the risks and opportunities for option 3 – AD with biogas to third party.

Table 4-3 – Risks and Opportunities matrix for option 3

Opportunities	Risks
Footprint: It would require the smallest footprint compared to the other two options as there is no CHP or biogas upgrading unit. Option 3's small footprint would translate to lower capital cost for the purchase or lease of the site and likely better site availability.	Markets for outputs: Option 3 would produce biogas and digestate. The offtake of biogas from a third party although not novel, it is less mature and widespread compared to options 1 and 2. This risk is considered to be medium.
Carbon and climate impacts: From an environmental perspective, option 3 could be considered one of the most environmentally friendly options as there will be no CO_2 emissions from the facility. Any CO_2 emissions would be outside the plant's boundaries.	Plant references: AD plants exporting biogas to a third party is the least widespread configuration. AD plants most often are coupled with either CHP or biogas upgrading units which allow them to benefit from the sale of the final product (electricity and biomethane respectively). Although, it is expected that there will be a number of contractors with the expertise and experience to construct an AD plant, the track record is not that extensive.
Operational complexity and staffing: Due to the relatively simple operation of the AD, the complexity of operation and therefore staffing is expected to be the lowest among the three options as it avoids the need for complex processes such as CHP and biogas upgrading.	Revenue potential: Atkins' high-level estimation suggests that the revenue potential of Option 3 is the lowest. However, it should be noted that the value is based on wholesale gas price. It should be emphasised that a premium price could be agreed between BFC and the third-party sharing part of the governmental incentive,

	increasing the revenue potential of Option 3. Hence, the relevant commercial risk is considered to be high.
Planning and permitting requirements: Option 3 is considered the least complex technology from a planning and permitting perspective and similar to option 2. This is mainly due to the lack of any combustion process which would need air emission limits as part of the planning and permitting conditions.	Required tonnage of feedstock: Based on a high-level assessment, option 3 would have the lowest CAPEX but would be eligible only for wholesale gas price. In our view the financial viability of this option is considered doubtful with the current assumptions However, as mentioned above it could be argued that a premium price would likely be agreed between BFC and the third party, increasing the revenue potential of option 3. The current plans are considered to have high risks in comparison with the two other options. In any case, a cost benefit analysis would be essential to confirm the above statement and determine the required tonnage necessary for making the project feasible from a financial perspective.
Availability of the asset: Typically, the availability of a plant is determined by the maturity and complexity of the technology used. Considering that all technologies are considered mature, the complexity is the key parameter. The plant's availability for Option 3 is impacted only by the AD plant which typically ranges around 95%. From that perspective, option 3 is considered to have the highest availability.	
CAPEX: Based on Atkins' high-level estimations, option 3 has the lowest CAPEX due to the relatively simple configuration. A factor that has not been taken into account is the grid connection cost with the third party as this tends to be very site specific.	

5. Risks and Opportunities Matrix

This section presents a high-level comparative evaluation in the form of risks and opportunities analysis comparing the three options. It should be highlighted that the RAG (Red, Amber, Green) evaluation was based on qualitative data only. The results could differ substantially if a quantitative analysis is decided to be performed in due course and different weighting factors are applied or more parameters are included. For instance, if a cost benefit analysis is performed, it could reveal that only one option is financially viable and this option would automatically become the preferred option regardless of the number of opportunities the other options may have. However, this exercise is outside the scope of this study. Finally, it should be noted that the site boundaries include only those processes that BFC will build, own, and operate up to connection point and exclude any third-party processes and infrastructure which is outside the project boundaries. Table 5-1 summarises the risks and opportunities of each option per parameter.

Table 5-1 – Consolidated risks and opportunities matrix

Parameter	Impact	AD + electricity	AD + biomethane	AD + biogas
Footprint	Larger footprint will impact costs and likely site availability	High – it would have the largest footprint among the different options.	Medium – reduced footprint compared to option 1 but higher compared to option 3.	Medium – smallest footprint among the different options for Bracknell, however, there will need to be sufficient capacity available for an adjacent facility to manage the biogas within a reasonable distance.
Carbon and climate impacts	Carbon impact from deployed technology and potential to displace fossil fuel-based carbon	Medium – Option 1 is considered the least favourable option due to the need to combust the biogas within the plant's boundary emitting GHG emissions which are discharged to the atmosphere.	Low – Option 2 and 3 have the opportunity to recover CO_2 as a by-product in liquid form making the facility an almost zero-mission system which aligns with BFC's climate change strategy to be carbon neutral by 2050.	Low – As per option 2.
Operational complexity and staffing	Level of complexity impacts the operating and maintenance costs and staffing requirements of each option	Medium - Option 1 and Option 2 were considered to have the same complexity of operation due to the presence of process facilities such as CHP and membrane separation respectively.	Medium - Option 1 and Option 2 were considered to have the same complexity of operation due to the presence of process facilities such as CHP and membrane separation respectively.	Low - Option 3 avoids the need for complex process facilities and therefore has the lowest complexity and need for staffing.

Planning and permitting requirements	The more complex a technology the higher the risk of a lengthier approval process and the associated pre-construction or operation conditions attached to the planning permission or environmental permit..	Medium – Option 1 is considered to be the most complex technology as the planning and permitting process will include air emission limits from the power island and therefore lengthier approval processes for planning and permitting.	Low – Option 2 is considered the second least complex technology from a planning and permitting perspective.	Low – Option 3 is considered the least complex technology and therefore it could be argued that the planning and permitting process would have slightly less time-consuming.
Availability of the asset	The availability determines the number of hours the plant is operational in a period of time and therefore impacts opex and revenues	Medium – Typically the availability of a plant is determined by the maturity and complexity of the technology used. Considering that all technologies are considered mature, the complexity is the key parameter. Option 1 and option 2 are considered to have similar availability.	Medium – as per option 1.	Low – Option 3 is considered the least complex process and therefore its availability would be slightly higher compared to option 1 and 2.
Markets for outputs	Technologies that produce more outputs are scored higher than those that produce less due to the potential revenue streams	Low – Option 1 would produce electricity and digestate. Negligible difference between option 1 and 2 as the markets for their outputs are mature.	Low – Option 2 would produce biomethane and digestate. Negligible difference between option 1 and 2 as the markets for their outputs are mature.	Medium – Option 3 would produce biogas and digestate. The offtake of biogas from a third party although not novel, it is less mature and widespread compared to options 1 and 2.
Plant references	The number of similar plants that operate in the UK provide confidence that the technology is mature and that there are contractors with sufficient experience and expertise to build these kind of plants	Low – the majority of the AD plants currently in operation in the UK export electricity to the grid with a large range of electrical capacities ranging from a few kWe to MWe.	Medium – the latest AD plants build in the UK, export biomethane to the grid. This is a response to the change in the supportive schemes currently available in the UK for AD plants (Green Gas Support Scheme and Renewable Transport Fuel Obligation). Although currently not the	High – The number of similar plants that operate in the UK are the minority compared to the other two types of plants.

			majority, it is expected that in the upcoming years biomethane plants will become the majority for the abovementioned reason.	
CAPEX	Technologies that have a lower Capital Expenditure of investment, are scored higher than those that have a higher CAPEX.	Medium - Based on Atkins' high-level estimations, option 1 has a CAPEX that seats between option 2 and 3 as is the second most complex configuration. However, the grid connection cost with the local DNO or private offtaker has not been taken into account as this tends to be very site specific.	High - Based on Atkins' high-level estimations, option 2 has the highest CAPEX due to its complexity although the cost may be reduced as the demand is expected to be increased due to financial incentive for this type of configuration. A factor that has not been taken into account is the gas grid connection cost with the local gas grid network operator as this tends to be very site specific.	Low - Based on Atkins' high-level estimations, option 3 has the lowest CAPEX due to the relatively simple configuration. A factor that has not been taken into account is the grid connection cost with the third party as this tends to be very site specific.
OPEX	Technologies that have a lower Operational Expenditure, are scored higher than those that have a higher OPEX.	Low - Based on a high-level assessment it was estimated that it would have the lowest OPEX (and similar to option 3) compared to option 2.	Medium – based on a high-level assessment it was estimated that it would have the highest OPEX compared to the other two due to its complexity.	Low - Based on a high-level assessment it was estimated that it would have the lowest OPEX (and similar to option 1) compared to option 2.
Revenue potential	Technologies that have higher revenue potential are scored higher than those that had less	Low – Currently the size of the plant does not make it eligible to benefit from the Contracts of Difference scheme. The only stream of revenue will be wholesale electricity to the grid or a private offtaker, subject to fluctuation.	High - The AD with biomethane to grid plant would produce biomethane which would be eligible for financial incentives such as GGSS or RTFO. In addition, the plant would benefit from the wholesale price of gas to the grid and potentially from the export of CO_2 to the beverage industry market.	Low - Atkins' high-level estimation suggests that the revenue potential of Option 3 is the lowest. However, it should be noted that the value is based on wholesale gas price. It should be emphasised that a premium price would likely be agreed between BFC and the third-party sharing part of the governmental incentive, increasing the revenue

				potential of Option 3, such that it is competitive with Option 1.
Required tonnage of feedstock	The required tonnage of feedstock is determined by the balance sheet when all costs and revenues have been determined.	High - Based on a high-level assessment, option 1 would have the second highest CAPEX after option 2 but would be eligible only for wholesale electricity price. In our view the financial viability of this option is considered doubtful with the current assumptions. However, a cost benefit analysis would be essential to confirm the above statement and determine the required tonnage necessary for making the project feasible from a financial perspective.	Low - Based on a high-level assessment, option 2 would have the highest CAPEX but also eligible for the most revenue streams (GGSS and/or RTFO and wholesale gas). In our view that would be the most financially viable option. However, a cost benefit analysis would be essential to confirm the above statement and determine the required tonnage necessary for making the project feasible from a financial perspective.	High - Based on a high-level assessment, option 3 would have the lowest CAPEX and eligible for wholesale gas price to the third party only. In our view the financial viability of this option is considered doubtful with the current assumptions However, as mentioned above it could be argued that a premium price would likely be agreed between BFC and the third party, increasing the revenue potential of option 3. In any case, a cost benefit analysis would be essential to confirm the above statement and determine the required tonnage necessary for making the project feasible from a financial perspective.
Water and wastewater requirements	Technologies that have lower water and wastewater requirements are scored higher than those that require more	Medium – Negligible difference in water consumption and wastewater requirements between the three options described here.	Medium – Negligible difference in water consumption and wastewater requirements between the three options described here. However, subject to the type of technology used to upgrade the biogas, water consumption could be slightly higher.	Medium – Negligible difference in water consumption and wastewater requirements between the three options described here.

6. Conclusions

Based on the high-level risks and opportunities assessment and the current available information, it is Atkins' view that the most favourable route from a risk and opportunity perspective would be for BFC to explore the development of an AD plant with biomethane export. This is due to financial incentives currently available in the UK, which constitute a significant commercial opportunity. The AD with biogas export configuration could also be an alternative option pursuant though to the negotiation with the third party and the amount of premium that the third party will be willing to pay (essentially sharing the financial incentive from the sale of biomethane or electricity and/or heat). In any case, Atkins strongly recommends that a cost benefit analysis is performed before a final decision is taken which would provide the necessary validation from a quantitative perspective on the most favourable option to be taken forward for development.

Once a decision is taken in terms of the preferred process configuration, the following stems are recommended:

- Appointment of an Owner's Engineer (OE) who will guide BFC through the tendering process for the EPC Contractor selection up to construction. Other tasks of an OE role could include the review the plant's design and specifications, assessment and evaluation of the technical assumptions in the financial model and assist BFC during the due diligence phase should Lenders are invited to support the project financially. Atkins would be happy to provide this type of services.
- Appointment of an Environmental and Planning Consultant who will guide BFC through the appropriate planning consent process and Environment Agency's regulations. This needs to be done early on to inform the design with regard to regulatory requirements including Best Available Techniques (BAT) and confirm the appropriate consenting strategy (i.e. would the facility constitute a Nationally Significant Infrastructure Project). Atkins would be happy to provide these types of services.
- Selection of the appropriate site with good access to the road network, proximity to the catchment areas for minimising transport costs and utilities such as electrical and/or gas grid networks but also a sufficient distance from sensitive receptors to minimise possible impacts from any noise and odours. Finally, the appropriate site should be in an area which adequately addresses flood risk and that it is not located in any protected or designated landscape. Atkins can support BFC in the site selection process.
- Depending on the appropriate application process to be followed, pre-application consultation with the relevant planning authority to set out intention and description of the scheme and to confirm:
  - the principle of the development/location
  - whether there is a need for EIA
  - the key issues to address in design/application
  - the appropriate assessments and supporting information to accompany the application.
- The contents of the planning application would, as a minimum, need to include:
  - Location Plan, proposed site plan and elevation drawings.
  - Design and Access Statement;
  - Landscape proposals;
  - Biodiversity Report and Net Gain Statement;
  - Flood Risk Assessment;
  - Photomontage of digester, plant buildings and stack with clear indication of building material and colour;
  - Information on grid connection works;
  - Details of emissions to air and an assessment of their impact;
  - Details of vehicular access and vehicular movement;
  - Site management measures during the construction phase;
  - Model of emissions dispersion (if applicable).

- Inform the local community early on and commence consultation for the local community's acceptance of the project.
- Commence discussion with the Environment Agency for the type of permit necessary for the plant.

It should be noted that the above list is non-exhaustive. This is based on a preliminary assessment and are based on a high-level exercise for the typical roadmap of an AD plant.

END

Tryfon Papalexandrou
Atkins Limited
Woodcote Grove
Ashley Road
Epsom
KT18 5BW

Tel: +44 (0)1372 726140
Fax: +44 (0)1372 740055