

Mercia EnviRecover
**PROPOSED DEVELOPMENT OF A RENEWABLE ENERGY
PLANT ON LAND AT HARTLEBURY TRADING ESTATE,
HARTLEBURY, WORCESTERSHIRE**

**Environmental Statement
Regulation 19 Submission
Further Information in respect of an Electrical
Grid Connection**

August 2011

axis



Mercia EnviRecover

PROPOSED DEVELOPMENT OF AN ENERGY FROM WASTE FACILITY ON LAND AT HARTLEBURY TRADING ESTATE, HARTLEBURY, WORCESTERSHIRE

ENVIRONMENTAL STATEMENT REGULATION 19 SUBMISSION

FURTHER INFORMATION IN RESPECT OF AN ELECTRICAL GRID CONNECTION

AUGUST 2011

This report has been prepared in support of the planning application for the Mercia EnviRecover Development and has been prepared on behalf of Mercia Waste Management. The application has been co-ordinated by Axis with technical inputs from:

- AXIS – Planning, Transportation, Landscape & Visual, Archaeology & Cultural Heritage, Surface Waters & Flood Risk
- Hyder - Geology & Hydrogeology
- Fichtner – Facility Design, Process Description and Justification, Air Quality & Health Assessment
- Argus – Ecology and Nature Conservation
- NVC – Noise
- Studio E – Facility Design and Architecture



Camellia House
Water Lane
Wilmslow
SK9 5BB

CONTENTS

FOREWORD

1.0	INTRODUCTION AND BACKGROUND.....	1
1.1	Introduction	1
1.2	Requirement for Environmental Assessment	1
1.3	This Document.....	2
2.0	GRID CONNECTION.....	2
2.1	Connection Options	2
2.2	Description of Grid Connection	3
3.0	ASSESSMENT OF EFFECTS.....	5
4.0	CONCLUSIONS AND RESIDUAL IMPACTS.....	10

Figures

Figure 1 Proposed Grid Connection Route

Appendices

Appendix A	Regulation 19 Request
Appendix B	Addendum to the Non -Technical Summary
Appendix C	Grid Connection Feasibility - Addendum
Appendix D	Grid Connection Ecological Walkover Survey and Assessment

FOREWORD

This Environmental Statement is submitted in support of a planning application made by Mercia Waste Management to develop the Mercia EnviRecover facility an Energy from Waste facility, on land at Hartlebury Trading Estate in Worcestershire. The Environmental Statement comprises the following documents:

- The Environmental Statement (ES) Main Report (Volume 1), which contains the detailed project description; an evaluation of the current environment in the area of the proposed development; the predicted environmental impacts of the scheme; and details of the proposed mitigation measures which would alleviate, compensate for, or remove those impacts identified in the study. Volume 1 also includes a summary of the overall environmental impacts of the proposed development and all relevant schematics, diagrams and illustrative figures;
- Technical Appendices (Volume 2), which include details of the methodology and information used in the assessment, detailed technical schedules and, where appropriate, raw data. (Volume 2 is printed in black and white. However, a CD is enclosed that includes a colour version of all the technical reports);
- A Non-Technical Summary (Volume 3), containing a brief description of the proposed development and a summary of the ES, expressed in non-technical language;
- An update to the ES by way of a Regulation 19 submission of further environmental information. This is contained in two parts comprising:
 - An assessment of the likely significant environmental effects of the facility's electrical grid connection; and
 - A Revised Non-Technical Summary (Volume 3) with addition of a description of the main alternatives considered by the applicant.

Copies of the first three documents, as a three volume set, are available at a cost of £200 from Mercia Waste Management, The Marina, Kings Road, Evesham, Worcestershire, WR11 3XZ. Alternatively, the original and Revised Non-Technical Summary documents can be purchased on their own from the same point of contact for £15 each. Electronic copies of the two Non-Technical Summaries are also available via email (enquiries@severnwaste.co.uk), free of charge. The Regulation 19 update documents are available as a two volume set for £25. In addition, all of the planning application documentation, including the ES and Regulation 19 update can be downloaded from www.envirecover.co.uk

1.0 INTRODUCTION AND BACKGROUND

1.1 Introduction

1.1.1 In April 2010 Mercia Waste Management (MWM) submitted a planning application, reference 10/000032/CM, to Worcestershire County Council (WCC) for the development of a purpose built Energy from Waste (EfW) plant, on land at Hartlebury Trading Estate, Hartlebury, Worcestershire. The application was accompanied by an Environmental Statement (ES).

1.1.2 The planning application was duly considered by the WCC Planning and Regulatory Committee on the 1st March 2011. The Committee resolved to approve the application. On the 10th May 2011 the application was 'called in' for determination by the Secretary of State. A Public Inquiry into the proposed development will commence on the 22nd November 2011.

1.1.3 Following correspondence with the Applicant and examination of the ES, the Secretary of State has made a formal request for further environmental information under Regulation 19 of the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999. A copy of the request is included at Appendix A.

1.1.4 The Regulation 19 request requires that the following additional information is provided:

- an assessment of the likely significant effects associated with the electrical grid connection for the proposed energy from waste facility; and
- an addendum to the non-technical summary which reflects the information contained within this assessment.

1.2 Requirement for Environmental Assessment

1.2.1 Section 5.5 of the original ES describes how the proposed EfW facility would require a new grid connection in order to export electricity off-site. It describes how the grid connection would be subject to a separate consenting procedure falling either under S37 of the Electricity Act or permitted development rights and as such does not form part of the planning application submitted to WCC. On the basis that the grid connection did not form part of the planning

application an assessment of the environmental impacts associated with these works was not undertaken as part of the ES.

- 1.2.2 However, following the submission of a recent EfW facility application in Cheshire and a subsequent appeal thereafter, a ruling was made by the Secretary of State in April 2011 in relation to the environmental assessment of projects which require a connection to the local electricity distribution network¹. The ruling makes it clear that if the export of electricity is a necessary and intrinsic part of a development the potential environmental effects of the connection to the local electricity distribution network should be assessed within the ES.

1.3 This Document

- 1.3.1 This document is a supplement to the original ES and assesses the likely significant environmental effects of the proposed electrical grid connection. It is in four main sections of which this Introduction forms the first. Chapter 2.0 of the report briefly describes the grid connection works proposed for the development. Chapter 3.0 provides an assessment of the potential environmental impact of the proposed grid connection and any mitigation that may be required to reduce or avoid adverse effects. Finally Chapter 4.0 provides a summary of the residual impacts from the proposal and conclusions of the report. The addendum to the non-technical summary is included as Appendix B to the report.

2.0 GRID CONNECTION

2.1 Connection Options

- 2.1.1 A Grid Connection Study was undertaken in 2009 to identify potential grid connection options for the proposed development. This report is included as Appendix 5.3 of the original ES.
- 2.1.2 The study confirmed that the proposed EfW facility lies within the Central Network West (CNW) distribution network area. The closest distribution network cable is an overhead line (OHL) on the Stourport – Upton Warren/Redditch North 66 kV single circuit. This OHL passes in an east-west

¹ Appeals By Covanta Energy Limited, Land Adjoining Pochin Way And Erf Way, Middlewich, Cheshire. Refs App/R0660/A/10/2129865 & 2142388. April 2011.

orientation approximately 0.8 km south of the site. Approximately 0.5 km to the south of this line is the Stourport - Droitwich/Kenswick 66 kV OHL circuit. The study concluded that it would be feasible to connect to either OHL but a connection to the closer Stourport – Upton Warren/Redditch North 66 kV single circuit would be preferable.

2.1.3 The study also considered the option of overhead and underground cabling. Despite the higher costs associated with underground cabling MWM decided underground cabling would be more preferable from an environmental impact and planning deliverability perspective. On this basis Option 4, a single underground cable circuit turn-in into the Stourport — Upton Warren/Redditch North 66 kV Circuit, was the preferred option.

2.1.4 Option 4 comprised an underground route that headed west from the southern site boundary along the roads within Hartlebury Trading Estate, directional drilling would then be required to cable beneath the Kidderminster - Droitwich railway line. To the west of the railway line the cable would be routed south until reaching the Stourport – Upton Warren/Redditch North 66 kV single circuit where the connection would be made.

2.1.5 In 2011 MWM commissioned a further, more detailed study into Option 4, the study is included as Appendix C to this report. As a result of further examination a route was identified that would avoid the need for directional drilling beneath the railway line by using the road underpass along Crown Lane. The modified route is referred to as Option 4a and is described in further detail below. This is the option that MWM now proposes to use.

2.2 Description of Grid Connection

Cable Route

2.2.1 The EfW facility would generate electricity at 11 kV. This would be 'stepped up' to 66 kV by an onsite transformer and exported from the EfW via the onsite sub-station.

2.2.2 The electricity would be exported from the southern boundary of the site via an underground cable. The cable would be routed west along Oak Drive for approximately 270 m to the junction with the main north-south Hartlebury

Trading Estate road. At this point the cable would be routed south for approximately 250 m to the junction with Crown Lane.

2.2.3 The cable route would then turn west and run along Crown Lane for approximately 230 m passing beneath the Kidderminster - Droitwich railway line. Immediately to the east of the railway line the cable route would turn south and run along an unnamed public road for approximately 480 m. This single track road provides access to Valley Farm and one other private residence. After approximately 480 m the cable route would turn east into an agricultural field where the cable would be brought up above ground and connected to the existing 66 kV overhead power line via a new 'H-pole' arrangement. An existing steel pylon is located at the connection point. A gateway currently provides access into the field for pylon inspection and maintenance. The underground cable would be laid within the gateway to avoid any loss of hedgerow.

2.2.4 The proposed grid connection route is shown in Figure 1.

Construction Methods

2.2.5 The electricity cable would be buried within a trench located within the metalled roadway of the trading estate and the public highway. The trench would be excavated to a depth of approximately 1 m and to a width of approximately 0.7 m (the approximate width of an excavating bucket) using a wheeled excavator or similar. The cabling would then be placed within the excavated trench and packed with a layer of sand for protection before being backfilled with excavated material. Road surfaces would then be reinstated and surfaced to the specification required by the highways authority. During the trenching a working area of approximately 3-4m in width would be required for the operation of machinery and temporary storage of excavated material prior to backfilling. As such appropriate traffic management would need to be put in place along the affected highways.

2.2.6 The H-pole arrangement at the point of connection to the existing overhead cables would comprise two wooden poles 10 m in height that support the electricity cabling and associated insulators. The two wooden poles would be placed within mechanically augured holes approximately 0.5 m in diameter. Two metal cable support stays would secure the H-pole in position. The H-

pole configuration and the cable connection into the existing pylon are shown in Appendix C.

- 2.2.7 The grid connection works are likely to be undertaken in parallel with the installation of plant and equipment as part of the Construction Programme shown in Appendix 5.4 of the original ES. Trenching works are likely to take up to 8 weeks, with the cable installation, erection of the H-pole and connection works another 4 – 6 weeks.

3.0 ASSESSMENT OF EFFECTS

- 3.1.1 The environmental impacts associated with the underground cabling works would be temporary and the majority of the works would be limited to metalled highways. As such impacts are considered likely to be similar in nature to those that arise from minor highways maintenance works and on this basis implementation of standard best practice construction methods is likely to avoid any significant environmental impacts arising. The only permanent above ground structure associated with the grid connection works would be the H-pole and the link to the existing overhead power lines.
- 3.1.2 The Construction Environmental Management Plan (CEMP) proposed in Chapter 5.0 of the original ES would include the construction works associated with the grid connection works and would set out how environmental issues would be managed in accordance with relevant legislation, regulations and best practice guidance. The CEMP would include measures required to avoid and reduce construction related environmental impacts e.g. pollution control management plan, traffic management procedures and requirements for ecological survey.
- 3.1.3 In order to understand the likely impacts associated with the grid connection an appraisal of each of the environmental topic areas covered within the ES has been undertaken. The findings are summarised in Table 1 below.

Table 1 – Assessment of Environmental Impacts Associated with Grid Connection Works

EIA Topic	Description of Potential Impacts	Mitigation
Traffic and Transport	<p>During the trenching works the sections of the highway subject to excavation would be closed to traffic. The highways within the trading estate and along Crown Lane are of sufficient width to enable a single flow of traffic to be maintained during the trenching works. As such a traffic light controlled system would operate for the period of the temporary works to manage traffic movements. Given the relatively low number of traffic movements along the highways affected and the temporary nature of the works any traffic control measures are unlikely to result in significant traffic delays.</p> <p>Traffic management would also be required along the unnamed road that runs to the west of the railway line. This may include a temporary closure of the highway and implementation of a temporary diversion route. The only properties accessed by this road are Valley Farm and a private residence. An alternative access to these properties is available from the south east. As such any temporary traffic control measures would not result in significant traffic impacts.</p>	<p>Temporary traffic control measures would be developed in liaison with Worcestershire County Council, the Local Highway Authority. Appropriate signage would be installed in advance of the works to inform local road users of the planned date and duration of the works.</p> <p>The owner of Valley Farm and the private residence would be consulted regarding traffic management proposals.</p>
Landscape and Visual	<p>The cable trenching works would not result in any significant landscape or visual impacts. The H-Pole arrangement would be placed adjacent to an existing metal pylon that is significantly larger than the proposed wooden H-pole. In addition the H-pole would be partially screened by</p>	<p>None considered necessary.</p>

EIA Topic	Description of Potential Impacts	Mitigation
	<p>existing trees and hedgerows present around the boundary of the field within which the H-pole is located. It should be noted that the site of the H-pole lies outside of the Green Belt and visibility from the Green Belt (which lies to the east of the railway line), would be limited due to the aforementioned screening features.</p> <p>As such it is considered unlikely that significant landscape or visual impacts would arise from the proposed grid connection works.</p>	
Ecology and Nature Conservation	<p>An ecological walkover survey and assessment has been undertaken for the proposed grid connection works. This report is included as Appendix D to this report.</p> <p>The majority of the grid connection works would be undertaken within existing highways and as such would not result in the loss of any habitats of value. However, the survey did identify a number of mature trees along the verge of the unnamed road to the west of the railway line. Whilst the impacts are unlikely to be significant the excavation works could result in damage to roots. In addition it was also noted that some of the mature trees have the potential to support bat roosts.</p> <p>None of the trees would be lost as a result of the works and a walkover of the site would suggest that there is sufficient headroom along the road to enable the works to be undertaken without the requirement for the pruning of any branches. As such there are unlikely to be any significant impacts on bats from the proposed works.</p>	<p>If major structural roots are identified during excavation hand excavation should be undertaken to avoid damage to the roots.</p> <p>If there is a requirement to prune any major branches (20cm diameter or more) the branches should first be inspected by a licensed bat worker to determine whether they have any risk of supporting a bat roost. Any major branches pruned as part of the works should be taken down using 'soft-felling' techniques in accordance with Bat Conservation Trust guidelines.</p>

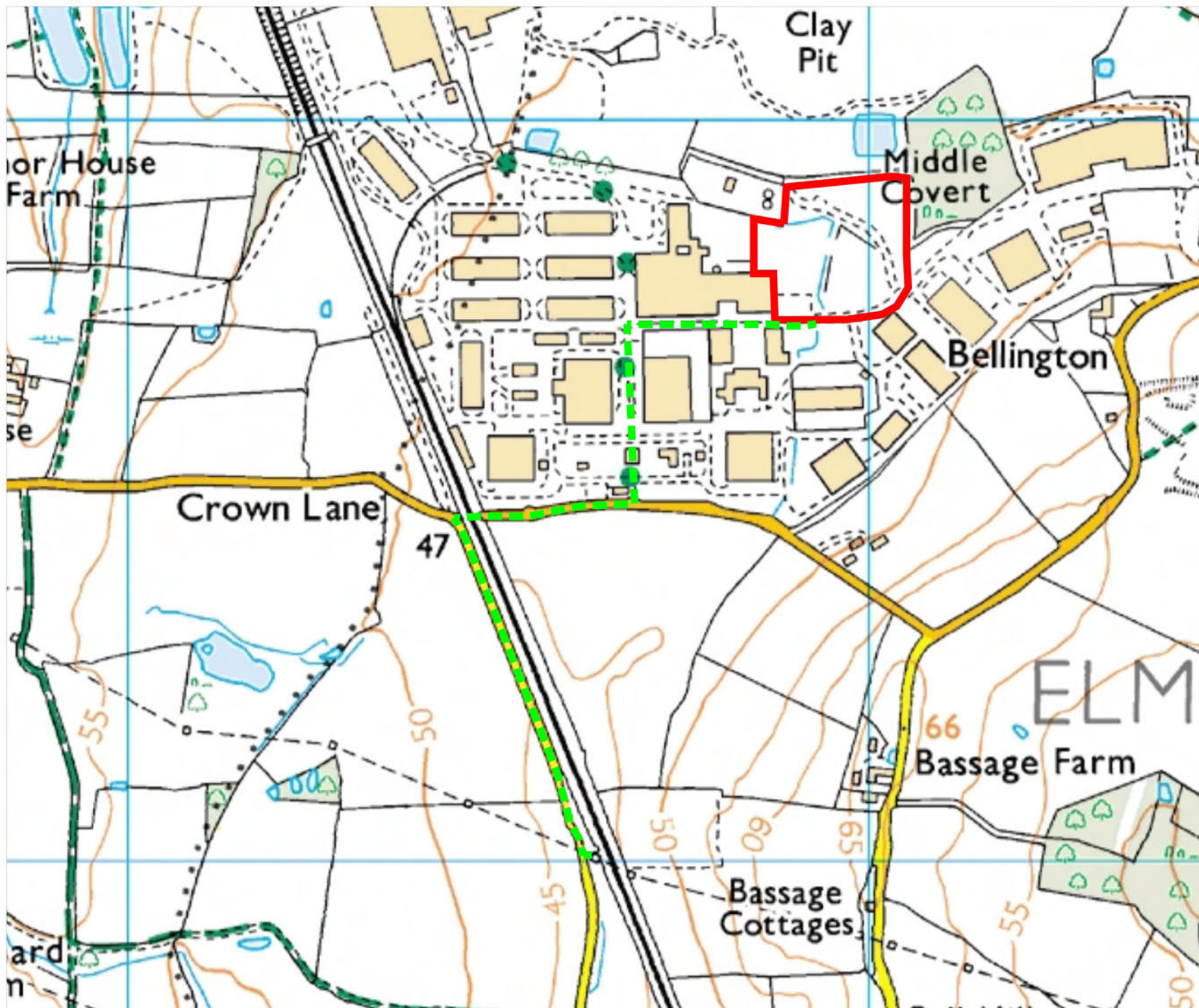
EIA Topic	Description of Potential Impacts	Mitigation
Geology, Soils and Groundwater	Given the shallow nature of the excavations and the routine nature of the works proposed no impacts associated with geology, soils or groundwaters are predicted.	None considered necessary.
Surface Waters and Flood Risk	The cable route into the agricultural field will require the crossing of a roadside drainage ditch. The drain has recently been cleared as a result of maintenance works and is devoid of vegetation (photographs of the ditch are included within Appendix D). The cable would either be placed in a trench beneath the bed of the drainage ditch or placed in cable duct across the ditch (it is assumed that the access to the field gate previously provided by a culvert will be re-instated in the near future). Given the minor nature of the construction works there are unlikely to be significant impacts in relation to surface water quality or flood risk.	Best practise measures would be adopted during the excavation works in line with CIRIA C532 Control of water pollution from construction sites.
Noise and Vibration	The proposed works would be similar in nature to standard road maintenance and no abnormal noisy operations such as piling are proposed. The proposed works would not be close to any residential properties.	No mitigation measures are proposed.
Air Quality	The proposed works would be similar in nature to standard road maintenance and the works are unlikely to result in significant arisings of fugitive dust. As such no significant impacts on air quality are predicted.	No mitigation measures are proposed.
Archaeology and Cultural Heritage	With the exception of the works associated with the H-pole the construction would be undertaken within the footprint of existing	No mitigation measures are proposed.

EIA Topic	Description of Potential Impacts	Mitigation
	highways. As such the excavations are likely to be undertaken in areas already subject to ground disturbance and therefore unlikely to result in impacts on buried archaeology. The works proposed in the agricultural field would be relatively minor and would include a narrow trench approximately 10 m in length and two machine augured holes for the wooden H-poles approximately 0.5 m in diameter. On this basis the likelihood of impacting any below ground features of archaeological interest are considered to be low.	

4.0 CONCLUSIONS AND RESIDUAL IMPACTS

- 4.1.1 The proposed grid connection works would involve the laying approximately 1.25km of underground cable within the footprint of existing metalled highways from the proposed development site to an existing overhead power line located approximately 0.8km to the south of the site. The cable would be connected to the existing Stourport - Droitwich/Kenswick 66 kV OHL circuit via a wooden H-pole arrangement that would be erected within an agricultural field adjacent to an existing metal lattice pylon.
- 4.1.2 A CEMP would be prepared as part of the EfW facility project and would include the construction works associated with the grid connection. The CEMP would include standard best practice measures that would help to avoid or reduce impacts from the construction works. The ecological impact assessment for the grid connection works identified specific mitigation measures required to ensure that there would be no adverse impacts on mature trees located adjacent to the underground cabling route.
- 4.1.3 The introduction of the H-pole arrangement is not considered likely to result in significant landscape or visual impacts (including effects on the visual amenities of the Green Belt) due to its proximity to the adjacent overhead pylon and partial screening by existing trees and hedgerows.
- 4.1.4 In considering the results of this assessment it can be concluded that the proposed grid connection works would not give rise to any significant adverse residual environmental impacts.

FIGURES



axis

Studio **E** Architects

- Site Location
- Cable Route



MERCIA ENVIRECOVER

PROPOSED DEVELOPMENT OF A
RENEWABLE ENERGY FACILITY ON LAND
AT HARTLEBURY TRADING ESTATE,
HARTLEBURY, WORCESTERSHIRE

Figure 1

Site Location Plan

Scale
1:5,000@A3

Date
August 2011

APPENDIX A

Regulation 19 Request



4/02 Kite Wing
Temple Quay House
2 The Square
Bristol, BS1 6PN

Direct Line: 0117 372 8612
Customer Services: 0117 372 6372
Fax No: 0117 372 6241
e-mail: mark.boulton@pins.gsi.gov.uk

Mr Nick Roberts
Axis
Camellia House
76 Water Lane
WILMSLOW
Cheshire
SK9 5BB

Your Ref:

Our Ref: APP/E1855/V/11/2153273

Date: 19 July 2011

Dear Mr Roberts

**The Town and Country Planning (Environmental Impact Assessment)(England and Wales) Regulations 1999 (As Amended)
Application by Mercia Waste Management Limited
Site at Plot H, 600 Oak Drive, Hartlebury Trading Estate, Hartlebury, DY10 4JB**

1. I refer to your letter of 13 July 2011.
2. I have considered the content of the Environmental Statement (ES) accompanying the planning application, having regard to Regulation 2(1) and Schedule 4 of The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999.
3. The development proposed is an energy from waste facility for the combustion of non hazardous waste and the recovery of energy. Comprising the energy from waste facility buildings and associated infrastructure (including: an excavated development platform; site access; internal roads; weighbridges; car parking; fencing drainage works; and landscaping).
4. By virtue of Regulation 4(2)(a) the development proposed is EIA development.
5. Following examination of the ES, the Secretary of State hereby notifies you by this letter, pursuant to Regulation 19 of the 1999 Regulations, that, to comply with Schedule 4 of the Regulations (Information for Inclusion in Environmental Statements) he requires the appellant to supply the following 'further information' for the purposes of a public inquiry to be held in accordance with The Town and Country Planning (Inquiries Procedure) (England) Rules 2000.
 - An assessment of the likely significant effects associated with the electrical grid connection for the proposed energy from waste facility.

- An addendum to the non-technical summary which reflects the information contained within this assessment.
6. May I draw your attention to court cases which have stressed the need for all the relevant environmental information in an ES to be comprehensive and easily accessible. I also refer to paragraph 82 of Circular 02/99 (Environmental Impact Assessment), which states that whilst every ES should provide a full factual description of the development, the emphasis of Schedule 4 is on the main or significant environmental effects.
 7. Although it is not a statutory requirement, in the interests of transparency and openness the appellant is respectfully requested to publicise the availability of the further information in accordance with Regulations 19(3) to (9) inclusive of the Regulations. Please can you advise me, and the Council, when it has been done.
 8. In your letter of 13 July 2011 you advised that the further information relating to the grid connection was expected to be submitted no later than 12 August 2011. I would be grateful if you could let me know of any change in this anticipated timescale.
 9. A copy of this Direction has been sent to Worcestershire County Council and W.A.I.L.

Yours sincerely

Mark Boulton

You can use the Internet to submit documents, to see information and to check the progress of this case through the Planning Portal. The address of our search page is -

<http://www.pcs.planningportal.gov.uk/pcsportal/casesearch.asp>

You can access this case by putting the above reference number into the 'Case Ref' field of the 'Search' page and clicking on the search button

APPENDIX B

Addendum to the Non-Technical Summary



Mercia EnviRecover

PROPOSED DEVELOPMENT OF AN ENERGY FROM WASTE FACILITY ON LAND AT HARTLEBURY TRADING ESTATE, HARTLEBURY, WORCESTERSHIRE

ENVIRONMENTAL STATEMENT REGULATION 19 SUBMISSION

NON-TECHNICAL SUMMARY ADDENDUM ON FURTHER INFORMATION IN RESPECT OF AN ELECTRICAL GRID CONNECTION

AUGUST 2011

This report has been prepared in support of the planning application for the Mercia EnviRecover Development and has been prepared on behalf of Mercia Waste Management. The application has been co-ordinated by Axis with technical inputs from:

- AXIS – Planning, Transportation, Landscape & Visual, Archaeology & Cultural Heritage, Surface Waters & Flood Risk
- Hyder - Geology & Hydrogeology
- Fichtner – Facility Design, Process Description and Justification, Air Quality & Health Assessment
- Argus – Ecology and Nature Conservation
- NVC – Noise
- Studio E – Facility Design and Architecture



Camellia House
Water Lane
Wilmslow
SK9 5BB

CONTENTS

FOREWORD

1.0	INTRODUCTION	1
2.0	GRID CONNECTION.....	1
3.0	ASSESSMENT OF EFFECTS	2
4.0	SUMMARY	3

FIGURES

Figure 1 – Grid Connection Route

Figure 2 – H-pole Connection into Overhead Line

FOREWORD

This Environmental Statement is submitted in support of a planning application made by Mercia Waste Management to develop the Mercia EnviRecover facility an Energy from Waste facility, on land at Hartlebury Trading Estate in Worcestershire. The Environmental Statement comprises the following documents:

- The Environmental Statement (ES) Main Report (Volume 1), which contains the detailed project description; an evaluation of the current environment in the area of the proposed development; the predicted environmental impacts of the scheme; and details of the proposed mitigation measures which would alleviate, compensate for, or remove those impacts identified in the study. Volume 1 also includes a summary of the overall environmental impacts of the proposed development and all relevant schematics, diagrams and illustrative figures;
- Technical Appendices (Volume 2), which include details of the methodology and information used in the assessment, detailed technical schedules and, where appropriate, raw data. (Volume 2 is printed in black and white. However, a CD is enclosed that includes a colour version of all the technical reports);
- A Non-Technical Summary (Volume 3), containing a brief description of the proposed development and a summary of the ES, expressed in non-technical language;
- An update to the ES by way of a Regulation 19 submission of further environmental information. This is contained in two parts comprising:
 - An assessment of the likely significant environmental effects of the facility's electrical grid connection; and
 - A Revised Non-Technical Summary (Volume 3) with addition of a description of the main alternatives considered by the applicant.

Copies of the first three documents, as a three volume set, are available at a cost of £200 from Mercia Waste Management, The Marina, Kings Road, Evesham, Worcestershire, WR11 3XZ. Alternatively, the original and Revised Non-Technical Summary documents can be purchased on their own from the same point of contact for £15 each. Electronic copies of the two Non-Technical Summaries are also available via email (enquiries@severnwaste.co.uk), free of charge. The Regulation 19 update documents are available as a two volume set for £25. In addition, all of the planning application documentation, including the ES and Regulation 19 update can be downloaded from www.envirecover.co.uk

1.0 INTRODUCTION

- 1.1 This document forms an Addendum to the Mercia EnviRecover Environmental Statement (ES) Revised Non-Technical Summary (NTS) (August 2011). The Revised NTS and the original ES (April 2010) has been submitted in support of a planning application made by Mercia Waste Management (MWM) in April 2010 to develop the Mercia EnviRecover facility an Energy from Waste (EfW) facility, on land at Hartlebury Trading Estate in Worcestershire.
- 1.2 The Addendum has been produced in response to a request from the Secretary of State for further Environmental Information under Regulation 19 of the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulation 1999 with respect to the electrical grid connection for the proposed EfW facility.
- 1.3 The Addendum contains a brief description, in non-technical language, of the proposed works associated with the grid connection and provides a summary of the potential environmental impacts that could arise from these works. The document should be read in conjunction with the Mercia EnviRecover Environmental Statement Revised Non-Technical Summary (August 2011).

2.0 GRID CONNECTION

Connection Options

- 2.1 A Grid Connection Study was undertaken in 2009 to identify potential grid connection options for the proposed development. The closest connection point into the local electricity grid was identified as an overhead power line located approximately 0.8 km south of the site.
- 2.2 The study considered the option of overhead and underground cabling and despite the higher costs associated with underground cabling MWM decided underground cabling would be more preferable from an environmental impact and planning deliverability perspective. In 2011 MWM commissioned a further more detailed study into the preferred grid connection route which is described below. This is the option that MWM now proposes to use.

Cable Route

- 2.3 The EfW facility would generate electricity which would be exported from the facility via the onsite sub-station. An underground cable would run from the sub-station to the southern boundary of the site and into Oak Drive. The cable would be routed west along Oak Drive for approximately 270 m to the junction with the main north-south Hartlebury Trading Estate road. At this point the cable would be routed south for approximately 250 m to the junction with Crown Lane.
- 2.4 The cable route would then turn west and run along Crown Lane for approximately 230 m passing beneath the Kidderminster - Droitwich railway line. Immediately to the east of the railway line the cable route would turn south and run along an unnamed public road for approximately 480 m. This single track road provides access to Valley Farm and a single private residence. After approximately 480 m the cable route would turn east into an agricultural field where the cable would be brought up above ground and connected to the existing overhead power line via a new 'H-pole' arrangement. The H-pole arrangement comprises two wooden poles 10 m in height, the cable route is shown on Figure 1 and the H-pole arrangement is shown on Figure 2.

Construction Methods

- 2.5 The electricity cable would be buried within a trench located within the roadway of the trading estate and the public highway. The trench would be excavated to a depth of approximately 1 m and to a width of approximately 0.7 m. The cabling would then be placed within the excavated trench and packed with a layer of sand for protection before being backfilled with excavated material and the road reinstated. During the works traffic management would be put in place along the affected roads. Two holes, approximately 0.5 m in diameter would be excavated for the wooden H-pole. Two metal cables would secure the H-pole in position.

3.0 ASSESSMENT OF EFFECTS

- 3.1 The environmental impacts associated with the underground cabling works would be temporary and the majority of the works would be limited to existing roads. As such impacts are considered likely to be similar in nature to those

that arise from minor road maintenance work. The only permanent above ground structure associated with the grid connection works would be the H-pole and the link to the existing overhead power lines.

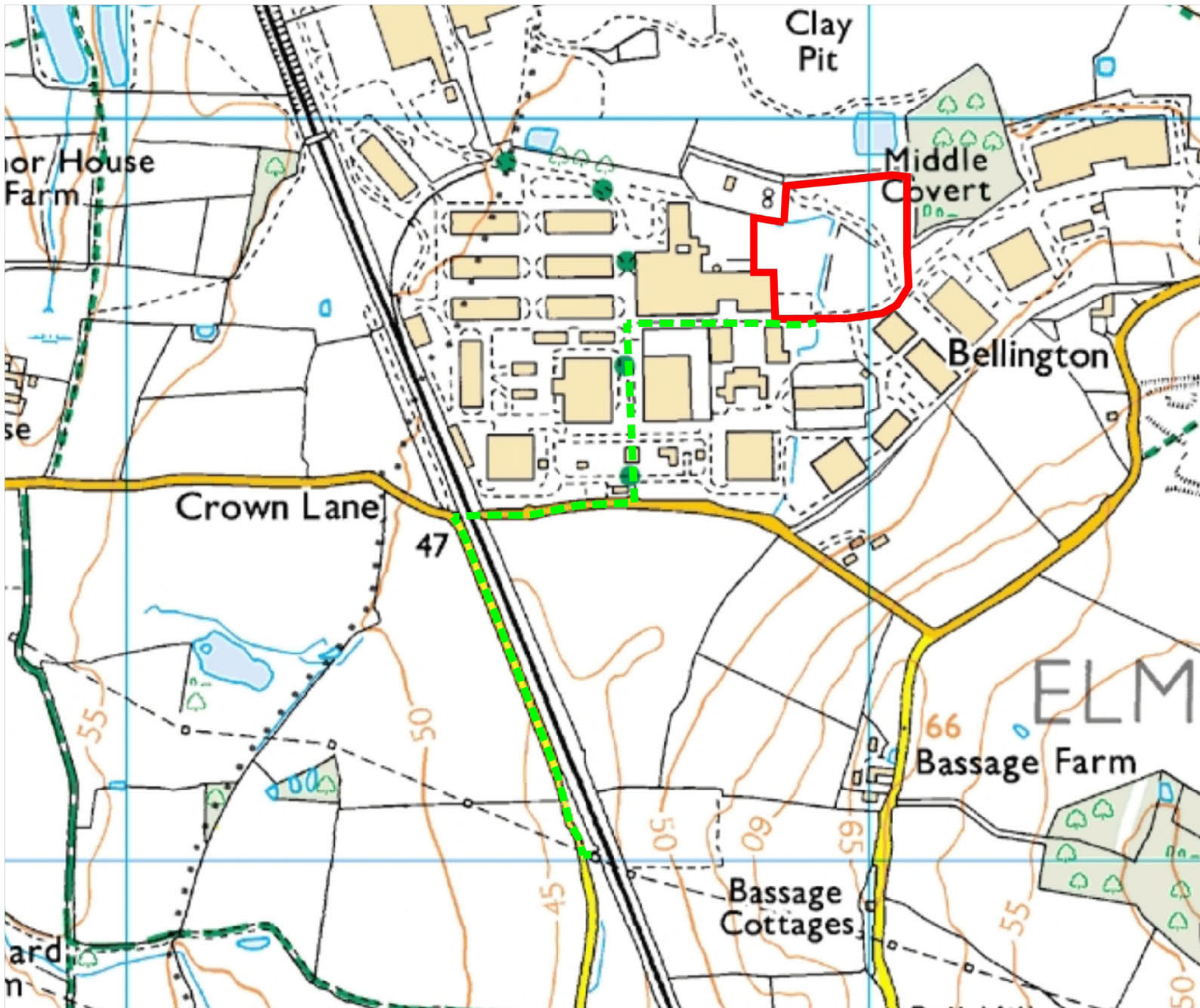
- 3.2 The Construction Environmental Management Plan (CEMP) developed for the construction of the EfW facility would include the grid connection works. The CEMP would set out how environmental issues would be managed in accordance with relevant legislation, regulations and best practice guidance.
- 3.3 In order to understand the likely impacts associated with the grid connection an appraisal of each of the environmental topic areas covered within the original ES has been undertaken.
- 3.4 Standard best practice construction methods would be implemented to manage potential impacts associated with noise, air quality, water quality and traffic management. No significant impacts were identified in relation to geology and hydrogeology or archaeology and cultural heritage.
- 3.5 An ecological survey of the grid connection route has been undertaken. No habitats of value would be lost as a result of the works but the survey did identify a number of mature trees adjacent to the unnamed road to the west of the railway line. Mitigation measures have been proposed to prevent damage to the root systems of these trees. No other ecological impacts were identified.
- 3.6 The introduction of the H-pole arrangement into the landscape is not considered likely to result in significant landscape or visual impacts due to its proximity to an existing overhead pylon and as a result of screening from existing trees and hedgerows. It should be noted that the site of the H-pole lies outside of the Green Belt and visibility from the Green Belt (which lies to the east of the railway line), would be limited due to the aforementioned screening features.

4.0 SUMMARY

- 4.1 An environmental assessment of the proposed grid connection works associated with the proposed Mercia EnviRecover EfW facility has been undertaken.

-
- 4.2 In considering the results of this assessment it can be concluded that the proposed grid connection works would not give rise to any significant adverse residual environmental impacts.

FIGURES



Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright & database right 2009. All rights reserved. Ordnance Survey Licence number AL 100036678.

axis

Studio **E** Architects

- Site Location
- Cable Route



MERCIA ENVIRECOVER

PROPOSED DEVELOPMENT OF A
RENEWABLE ENERGY FACILITY ON LAND
AT HARTLEBURY TRADING ESTATE,
HARTLEBURY, WORCESTERSHIRE

Figure 1

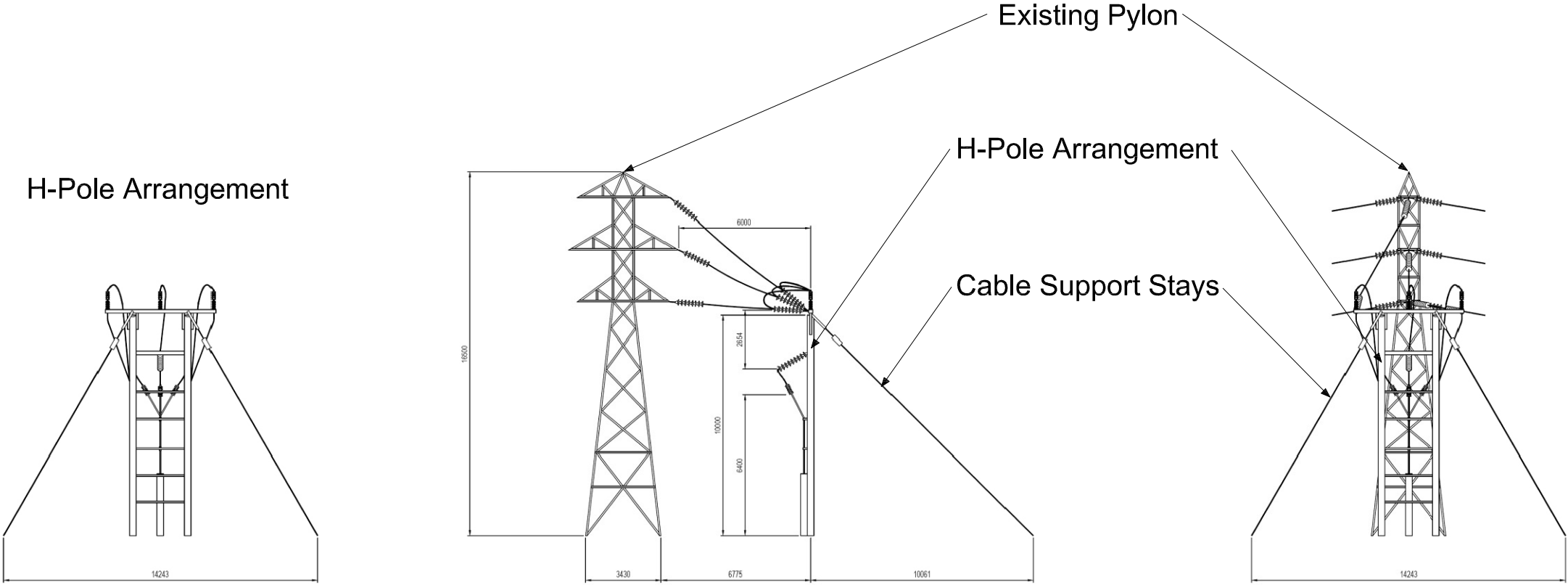
Site Location Plan

Scale
1:5,000@A3

Date
August 2011



Studio **E** Architects



MERCIA ENVIRECOVER

PROPOSED DEVELOPMENT OF A
RENEWABLE ENERGY FACILITY ON LAND
AT HARTLEBURY TRADING ESTATE,
HARTLEBURY, WORCESTERSHIRE

Figure 2

H-Pole Connection
Into Overhead Line

Not to scale

Date
August 2011

APPENDIX C

Grid Connection Feasibility – Addendum

MERCIA WASTE MANAGEMENT GROUP LIMITED

20 MW GENERATION CONNECTION FEASIBILITY



HARTLEBURY TRADING ESTATE PROPOSED SITE

ADDENDUM

15/07/2011

REPORT AUTHORISATION SHEET

Client: **MERCIA WASTE MANAGEMENT GROUP LIMITED**
Project: **20 MW GENERATION CONNECTION FEASIBILITY**
Project Number **10181**
Report Title **Addendum**
Report Version **1.3**
Report Date **15/07/2011**

Prepared by:

Name: Femi Olushola



Position: Project manager

Date: 15/07/11

Checked by:

Name: Fabian Meazzo



Position: Principal Engineer

Date: 15/07/11

Authorised for issue:

Name: Amarjit S. Jhutti



Position: Managing Director

Date: 15/07/11

Version No.	Report Date	Comment	Author	Checked	Authorised
1.0	29/06/2011		FO		
1.1	10/07/2011	Authorised by ASJ for issue	FO	ASJ	ASJ
1.2	14/07/2011	Revised with MWM comments	FO	FM	ASJ
1.3	15/07/2011	Revised with MWM comment	FO	FM	ASJ

Contents

1	Introduction	4
2	Grid connection option detail and update.....	5
2.1	Overhead line connection.....	6
3	Summary and Recommendations	7

Appendices

Appendix A1 – Grid connection option 4A

Appendix A2 – Grid connection option 4

Appendix B – View of the route layout

Appendix C – Connection to the overhead line

1 INTRODUCTION

In 2009 London Power Associates Ltd (LPA) was commissioned by Mercia Waste Management (MWM) to carry out a generation connection feasibility study to determine the options available to connect MWM's proposed 20 MW Energy-from-Waste facility, Mercia Envirecover, to the local distribution network operator's (DNO) system. Further to this, MWM has considered option 4 and made advances towards the development of the energy from waste plant. In May 2011, MWM requested LPA to further investigate the preferred option from the initial feasibility study, with particular regard to:

1. The local geography, specifically the location of Envirecover within the Hartlebury Trading Estate, and the issue of taking the grid connection across the adjacent railway line.
2. The nature and specification of the equipment that forms the actual connection to the electricity grid.

This Addendum report addresses these two points above.

2 GRID CONNECTION OPTION DETAIL AND UPDATE

The initial study described of the substations around the area and six different connection options to the Stourport – Upton Warren/ Redditch North 66 kV circuit. The other voltage levels were also assessed but did not achieve the required security or cost effectiveness; the 11 kV system would have been thermally overloaded; the 33 kV substations and circuits were relatively far away; and the 132 kV circuit option and equipment would be too costly. The 66 kV circuit is within 2 km and capable of supporting the generation from the proposed plant.

The six different options are included in the main report¹ and option 4, underground cable turn-in connection from the Stourport – Upton Warren/Redditch North 66 kV circuit, has been further considered. The feasibility study (main report) showed that the proposed plant would be approximately located to the west of the Hartlebury trading Estate; illustration included in Appendix A- 2. Advances on the Energy from waste plant development, has now required a further study on the route layout for the plant. The exact location of the plant within the trading estate is shown to be more east than previously estimated and this has required a revision of the route layout.

Figure 2-1 and Appendix A- 1 (Drawing number ME-SWS-10181-001-GA-005) shows a plan for option 4A: Single Underground Cable Circuit turn-in into the Stourport – Upton Warren/Redditch North 66 kV Circuit. The proposed route follows an underground connection from the plot of the proposed EfW plant, Plot H600 on the Hartlebury Trading Estate, to the proposed turn-in point, previously identified, on the Stourport-Upton Warren/Redditch North 66kV OHL. This shows a marginal change in the route layout, which is also more suitable. The cable layout, as seen in Appendix A- 2, is shown routed to the west and across the railway track before turning south to be connected at the overhead line tower. Option 4a, Figure 2-1, shows that the underground cable would be within the estate and routed west (no. 132) and south (no. 133) before turning west again (no. 134). The route continues west and follows a foot path under a railway bridge. No directional drilling under the railway line would thus be required. The pictures showing the view of the route is provided in Appendix B- 1.

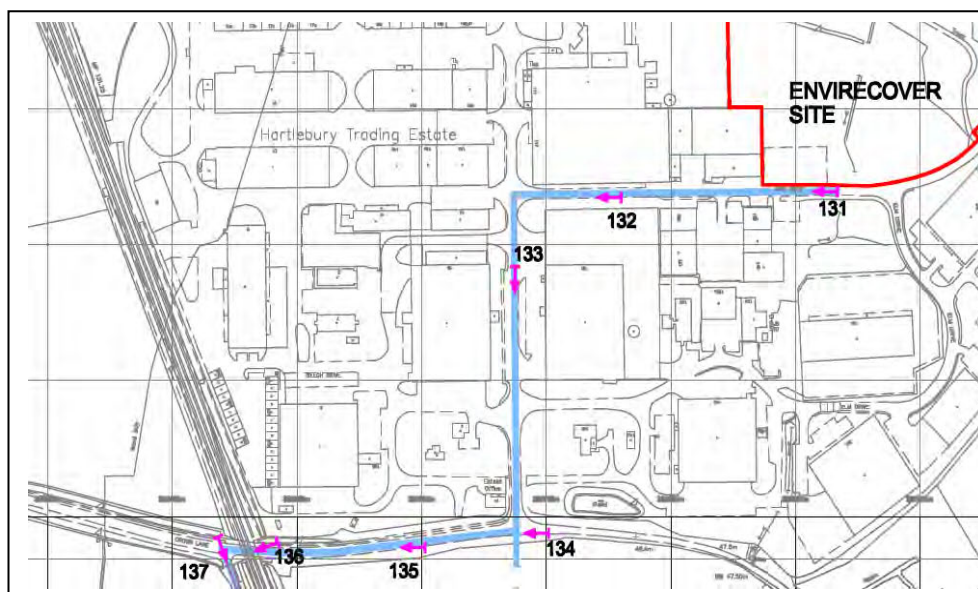


Figure 2-1 Option 4a route layout (zoomed in)

¹ 20 MW generation connection feasibility study, London Power Associates, Project no: 10134, 22nd July 2009

The benefit of this route is that it enables the connecting cable to be buried along the public highway, and Crown Lane, which passes underneath the railway line to the southwest of the Trading Estate. The cable will therefore not be visible. From leaving the Envirecover site, the cables would be located in a trench, constructed in the metalled roadway of the trading estate and public highway until it enters the field in which the existing 66kV OHL pylon is located.

The substation for the power plant is planned to be located within the generation site.

2.1 Overhead line connection

The Mercia Envirecover plant is planned to be a 20 MW energy from waste plant. The plant would export about 17 MW into the grid, while demanding 3 MW for its auxiliary load. The generator would operate at 11 kV and would be stepped up with a 11/66 kV step up transformer, and connected to the 66 kV circuit. Appendix C- 1 and Appendix C- 2 show elevations of the simple standard H-Pole and support arrangement that connects the cable to the existing 66 kV circuit at the pylon. These illustrate a diagrammatic and pictorial view of the H-pole, and connection. Appendix C-1 shows for a connection to a 66 kV overhead line tower. These illustrations show how the underground cable is brought up above ground, and using the H pole and insulators, is connected to the overhead line.

The H-poles are usually wooden and much smaller than the steel lattice overhead line pylons.

3 SUMMARY AND RECOMMENDATIONS

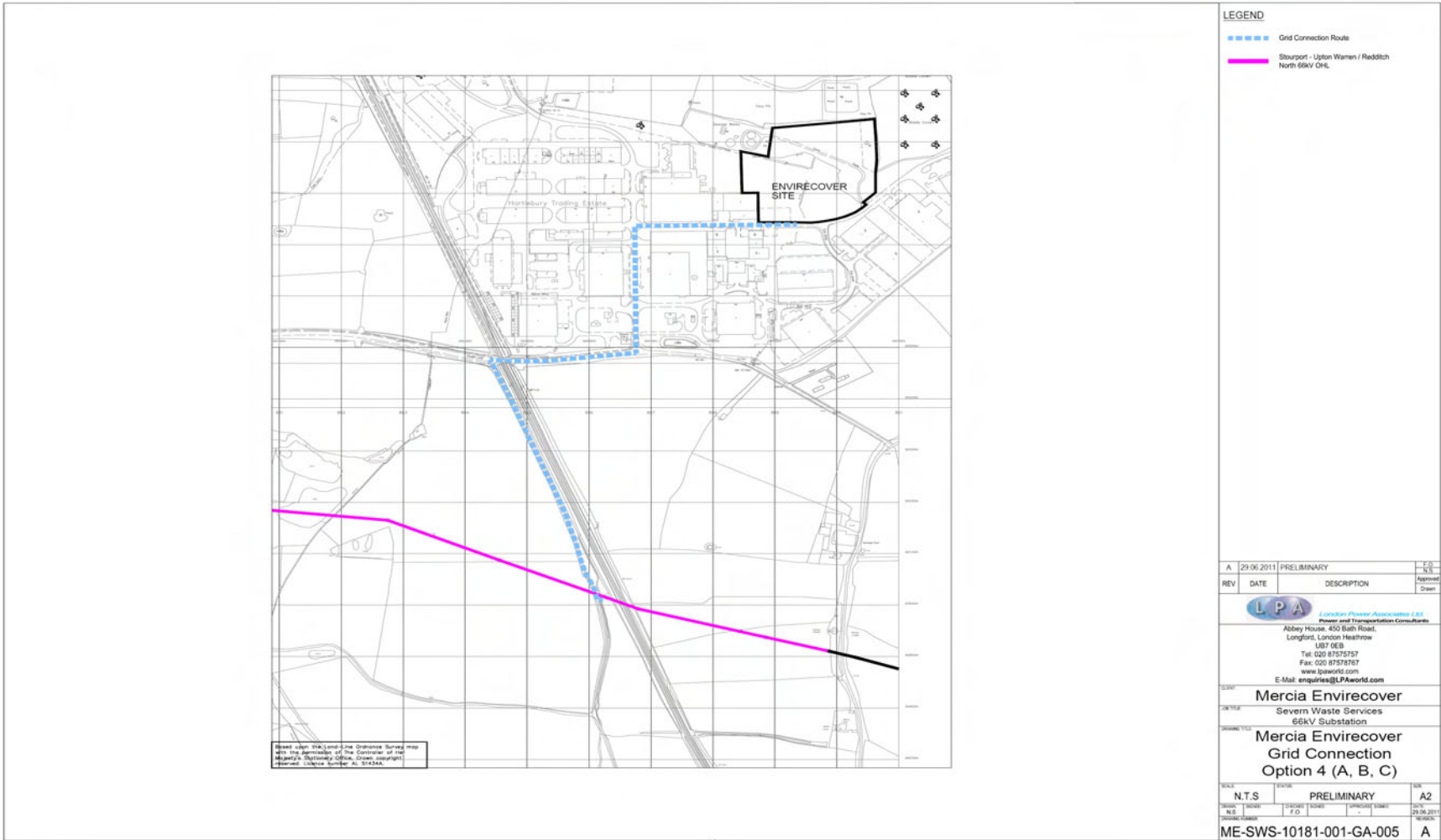
This report has been presented as an addendum to an earlier report prepared in 2009 '20 MW Generation Connection Feasibility Study' for a proposed 20 MW energy from waste power plant located at the Hartlebury trading estate in Kidderminster. There have been updates to the plant specification since the original study and these updates have been covered in this report. Mercia Waste Management has considered option 4 and made advances towards the development of the plant since the original report. The updates covered include the exact location of the Mercia Envirecover plant, particularly for the cable routing connection to the local network.

The reworked route due to changes in plant location has been shown in Figure 2-1 and Appendix A-1. The new route shows an improvement over the previous route, as this does not require directional drilling underneath the railway track. The cable is to be laid beneath the ground under the railway bridge and follows the public road and highways, thus being out of sight.

The underground cables would connect to the 66 kV network at an overhead line tower. Illustrations showing the method of connection have been provided in appendix C. These show the H-pole arrangement where the cable is connected to the 66 kV overhead circuit at a tower.

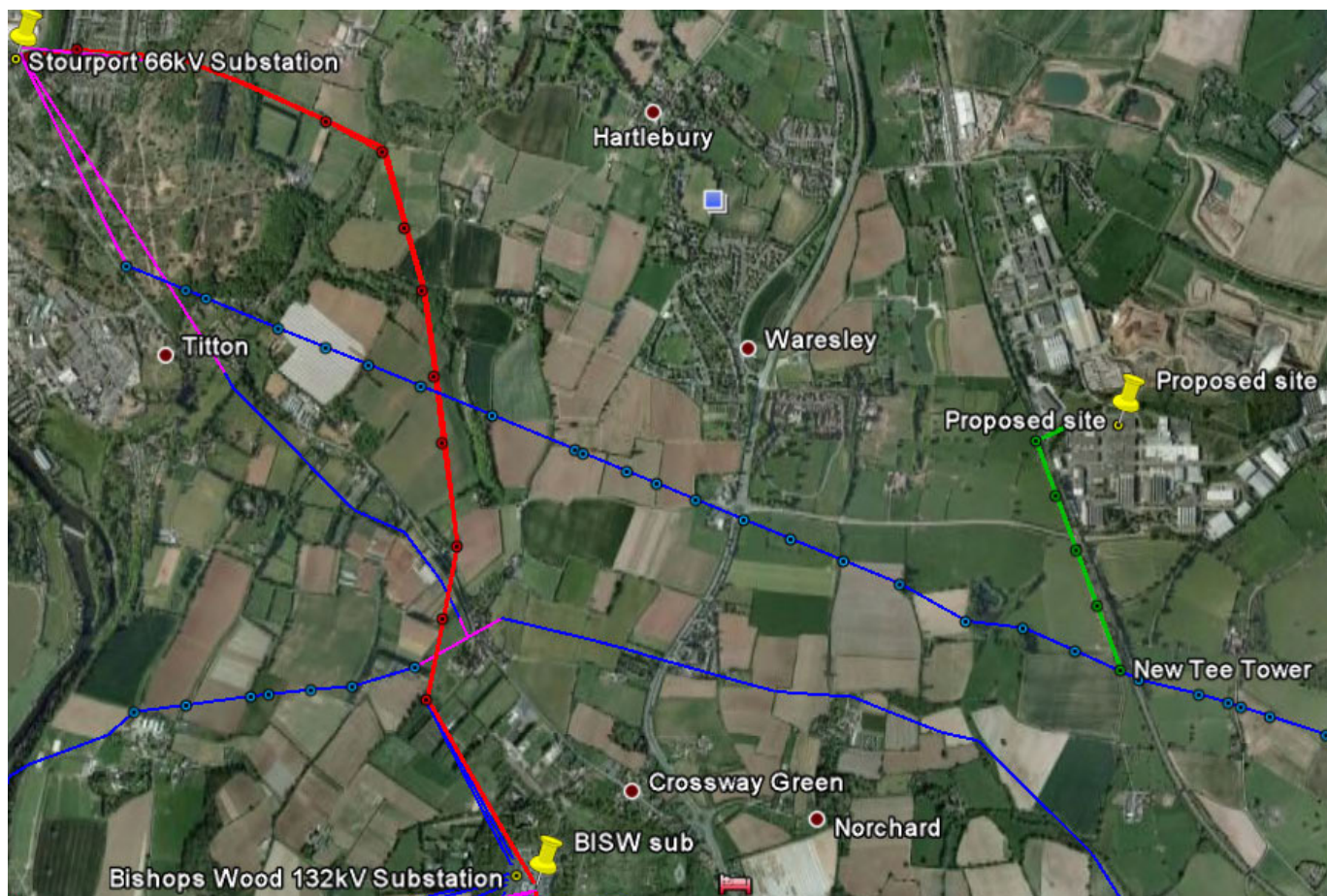
NOTES:

APPENDIX A1 – GRID CONNECTION OPTION 4A








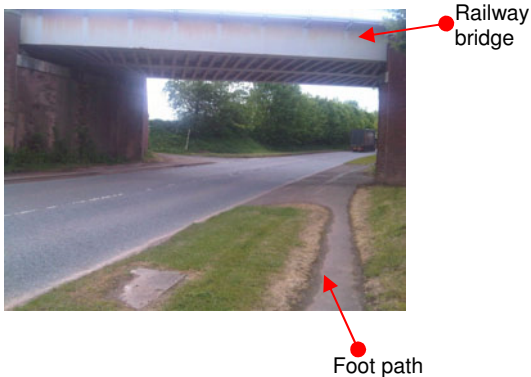
Appendix A- 1 option 4A – Single Underground Cable Circuit turn-in into the Stourport – Upton Warren/Redditch North 66 kV Circuit

APPENDIX A2 – GRID CONNECTION OPTION 4



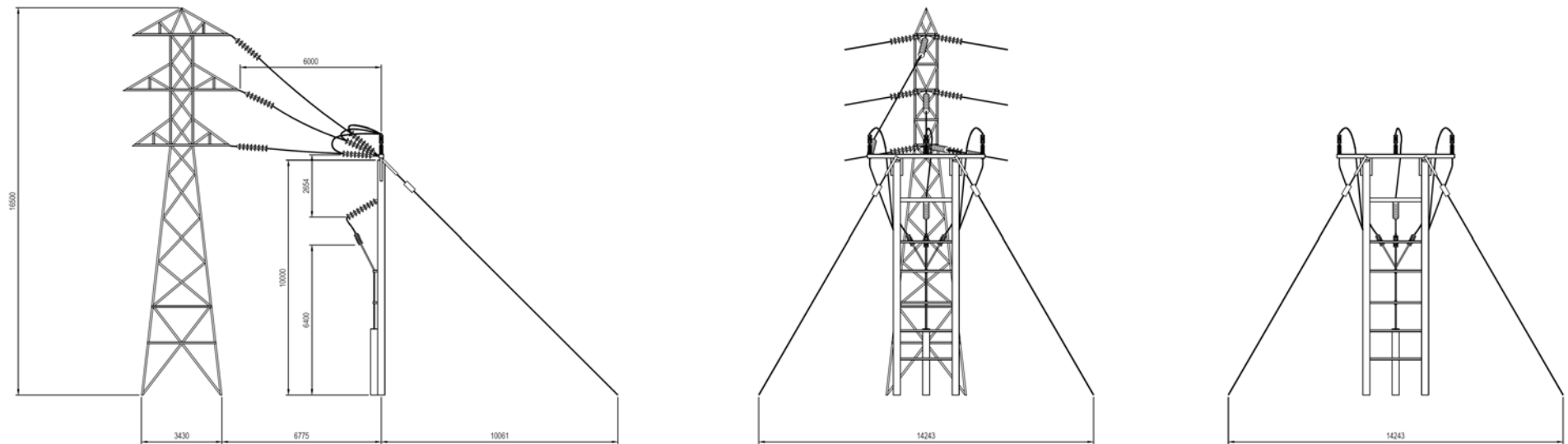
Appendix A- 2 The route layout and connection for option 4 (Previous layout with approximate location of the Mercia Envirecover 20 MW Energy from waste plant)

APPENDIX B – VIEW OF THE ROUTE LAYOUT

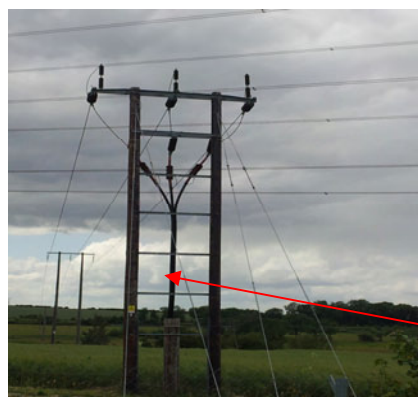
		
No. 131: Oak drive within Hartlebury Trading Estate	No. 132: Oak drive within Hartlebury Trading Estate	No.133: Gellyfowy Road within Hartlebury trading Estate
		
No. 134: Crown lane	No. 135: Crown lane	No. 136: Crown lane: foot path under the railway bridge

Appendix B- 1 View of the route layout every 100 m

APPENDIX C – CONNECTION TO THE OVERHEAD LINE



Appendix C- 1 The connection of the underground cable to the overhead line tower.



Underground
cable to
connect to
the OHL



Appendix C- 2 Pictorial illustration of a H-pole that would be used to connect the underground cables on the overhead line circuit

APPENDIX D

Grid Connection Ecological Walkover Survey and Assessment



**Mercia EnviRecover Project
Hartlebury Trading Estate
Worcestershire**

**Grid Connection – Ecological
Walkover Survey and Assessment**

Report Version 1.0

Prepared for Axis PED

7th August 2011

Unit 14 The Greenhouse Greencroft Industrial Park
Annfield Plain County Durham DH9 7XN

T: 01207 524859 F: 01207 524895 www.argusecology.co.uk

1 Introduction

This document provides an ecological survey and assessment of the proposed grid connection route for the electricity output from the proposed Mercia EnviRecover EfW facility, Hartlebury Trading Estate, Worcestershire. It is understood that output from the plant at 11kV would be stepped up to 66kV by an on-site transformer, before being routed from the site to a tee connection with the existing 66kV Stourport – Upton Warren / Redditch overhead line.

It is understood that the cable would be routed entirely within the public highway from the EfW plant on Oak Drive to a point close to a lattice tower on the overhead line, located in a field at grid reference SO 85267 69014. The underground cable would then be fixed to a wooden H-pole, and connected to the lattice tower.

The cable route is described below, paying particular attention to the section south of Crown Lane, where it passes along a narrow unclassified road, and the area of the tee connection. It is based on survey work carried out by Kevin Honour MSc MIEEM on 23rd May 2011, supplemented by knowledge of ecological interest features in the wider context of the site acquired as part of the ecological impact assessment of the proposed EfW plant.

2 Survey of grid connection route

2.1 EfW plant – Crown Lane

The cable will be routed south from the EfW plant onto Oak Drive, before being routed west within the highway for a distance of around 270m to its junction with the main Hartlebury Trading Estate. This is a 7m wide carriageway, and there are no habitats in close proximity to the road which could be affected by the proposed works. Industrial units are located close to the road, with a few small trees and ornamental shrubs, and a strip of amenity grassland on the verge.

The route turns south along the Trading Estate main road, which is over 8m wide, with industrial units set back some distance from the road. It continues south for a distance of around 240m to its junction with Crown Lane. There are extensive areas of hardstanding, with amenity grassland and scattered trees. Again, there are no habitats in close proximity to the road which could be affected by the proposed works.

2.2 Crown Lane

The cable route turns west along Crown Lane for a distance of around 200m within the 8m-wide carriageway. Vegetation to the north of the road includes an area of mature trees in the grounds of the Trading Estate office, but separated from the carriageway by a broad

amenity grassland verge and footpath. The south side of the road has a narrower, ca. 2m strip of amenity grassland, giving way to a shallow north-facing bank supporting tall herbs, bramble underscrub and scattered trees. The unmown section of this verge is structurally suitable to support slow-worm (*Anguis fragilis*), but there is no risk that works within the carriageway would have any impact on any individuals occupying this area.

The cable then passes under the rail overbridge; for this short distance of around 31m it will be constructed within the footpath on the south side of the road.



Photo 1: Looking east under rail bridge along Crown Lane cable route

2.3 Unclassified Crown Lane – Valley Farm road

The cable route turns south along a narrow (just over 3m wide) unclassified road for a total distance of around 480m.

On the east side of the road, a brick retaining wall at the foot of the rail embankment forms the boundary with the road for an initial 14m length. To the south of this the embankment supports a mix of scattered mature trees including oak (*Quercus robur*) and ash (*Fraxinus excelsior*), and mature goat willow (*Salix caprea*) scrub. This is interspersed with more open areas of tall false oat-grass (*Arrhenatherum elatius*) grassland, scattered hawthorn (*Crataegus monogyna*) scrub and bramble (*Rubus fruticosus*) underscrub, and regenerating ash, with occasional oak, Norway maple (*Acer platanoides*) and pear (*Pyrus communis*)

trees. These more open, west-facing areas of the rail embankment have some potential to support reptiles such as slow-worm.



Photo 2: North end of unclassified road, looking south

The east side of the road supports a low (ca. 2m) hedge, with a broad embankment at the north end (see picture above), narrowing to a low cam a short distance further south. The hedgerow supports a number of mature oak trees and some smaller standard hawthorn. Hedgerow shrubs include hawthorn, with occasional hazel (*Corylus avellana*) and locally frequent field maple (*Acer campestre*).



Photo 3: Road looking south – rail embankment to east, hedgerow to west

Further south a ditch culverted under the rail line emerges and flows parallel to the eastern side of the road. The area between the road and rail embankment is wider in this section, and densely wooded, with ash, oak, crack willow (*Salix fragilis*), alder (*Alnus glutinosa*) and field maple in the canopy. The dense shrub layer includes hazel, elder (*Sambucus nigra*), hawthorn, grey sallow (*Salix cinerea*), blackthorn (*Prunus spinosa*) and rose (*Rosa sp.*). Some of the mature oaks have loose bark and dead limbs, with crevice habitats and have a medium risk of supporting a bat roost. A small dead ash tree has a hollow bole with cavity access, and has a high risk of supporting a bat roost, owl and / or woodpecker nest.

The low hedge continues along the western side of the road, with trees including a small ivy-covered oak. Shrub species include a wild service tree (*Sorbus torminalis*), located almost opposite the culvert entrance.

At the south end of the woodland, the east side of the road is bounded by the ditch and a flat-topped, ca. 2m high hedgerow. The hedge is composed of hawthorn and dogwood (*Cornus sanguinea*), with hop (*Humulus lupulus*), honeysuckle (*Lonicera periclymenum*) and black bryony (*Tamus communis*) scrambling over. The ditch has tall herbs on its sides, with species such as water figwort (*Scrophularia auriculata*), hogweed (*Heracleum sphondylium*) and great willowherb (*Epilobium hirsutum*) present. The hedge and ditch have been recently (in May 2011) cleared over a ca. 20m section, with the hedge replaced by a fence and gate.

The west side hedge is dominated by suckering elm (*Ulmus procera* s.l.), with occasional elder; bramble, cleavers (*Galium aparine*) and black bryony are scrambling over. The verge

is dominated by tall herbs, umbellifers and grasses, including great willowherb, cow parsley (*Anthriscus sylvestris*), hogweed, false oat-grass and barren brome (*Anisantha sterilis*).



Photo 4: Wild service-tree in west side hedge, +/- opposite culvert to east



Photo 5: South end of western hedge, dominated by suckering elm

The installation of the grid connection along the minor road should not cause any direct ecological impacts, but there is some potential for incidental damage to overhanging trees, including some with a moderate to high potential to support bat roosts. There is also some potential for damage within the rooting zone of the trees, although the fact that trenching will be under a surfaced road with an aggregate base means there is less risk to fine surface feeding roots than an equivalent excavation in a verge. There should be no impact on the wild service-tree or other hedgerow shrubs.

2.4 Unclassified road – 66kV OHL connection

The cable will cross into the field with the lattice tower at a point where there is a recently cleared 19-20m gap with a ditch and fence, rather than hedgerow.



Photo 6: Location of grid connection, looking north

The field supports semi-improved neutral grassland managed as pasture, with abundant meadow buttercup (*Ranunculus acris*); it could not be accessed for detailed survey, but was clearly subject to significant agricultural improvement and had a negligible conservation value. Placing the cable over or tunnelling under the ditch will not have a significant impact on this feature.

3 Conclusions

3.1 Ecological impacts of grid connection

The routing of the grid connection cable through the public highway limits the potential for significant ecological impacts. The cable will cross into a semi-improved pasture field containing the 66kV line at a point where there is a 19-20m gap in the hedgerow, and a field ditch has been recently cleared.

There is some potential for indirect impacts on mature oak and other trees, some of which have the potential to support bat roosts, where branches overhang the road, and the road lies within the potential rooting zone of the tree.

3.2 Recommended measures to limit ecological impact

Care should be taken in the vicinity of mature trees to avoid damage to the rooting zone by limiting the width of excavation, if possible hand digging around any major structural roots which may be encountered under the road base. The cable trench should preferably be excavated by plant small enough to work under overhanging branches (e.g. JCB or smaller) to avoid the need for pruning. Any major branches (20cm diameter or more) to be pruned should first be inspected by a licensed bat worker to determine whether they have any risk of supporting a bat roost. Any major branches pruned as part of the works should be taken down using 'soft-felling' techniques in accordance with Bat Conservation Trust guidelines, using lowering and cushioning techniques to reduce the risk to any bats occupying cavities which may not have been apparent in the survey.