Proposed Renewable Energy Generation Facility
Pebble Hall Farm

Architectural Review Report for S96A
January 2015
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1.0 Introduction

On the 24th October 2014 planning permission reference 13/00098/WASFUL was granted for the development of a Renewable Energy Generation Facility (REGF) as a replacement for that previously permitted at Pebble Hall Farm, Theddingworth, Northamptonshire, LE17 6NJ.

2.0 Technology/Design developments

Following the approval of the application, Carbonarius Ltd have further engaged with the EPC Contractor for the construction of the REGF. As with all major schemes the level of information regarding the detailed design and engineering can only be progressed once the contractor is appointed and hence minor refinements to the scheme become apparent.

The detailed engineering design has resulted in minor changes being required to facilitate the installation of the equipment in a well-designed and safe manner.

In addition, following granting of planning permission Western Power Distribution (WPD) have increased their engagement with regard to the detailed provision of the electrical connection to the local grid and the 132kV network reinforcement required for the scheme. To date we have only been able to rely on early design information from WPD and whilst this information will continue to be developed by WPD it is now in a sufficiently robust form for the finalisation of the size and site layout of the on-site substation.

This architectural review report therefore summarises in section 3.0 a number of minor amendments that have arisen from this design and engineering development with the EPC Contractor and WPD. We believe these amendments are such that the Authority can agree them under a Section 96A amendment. Should further information or discussion be required on these matters please contact Mark Degg of Carbonarius Ltd on 07917 773565.
3.0 Site Layout

Removal of feedstock conveyor

It has been possible on detailed design review to remove the external elevated conveyor to the feedstock reception hall as shown on the planning drawing. This conveyor was in excess of 50m long and elevated over 9m high. Its removal is seen as an improvement to the visual appearance of the site.

As submitted

![As submitted diagram]

As proposed

![As proposed diagram]
Location of the ACC

The Air Cooled Condenser (ACC) has been moved marginally to improve the steam flow from the turbine exhaust that will result in a better transfer flow and efficiency. A benefit of this limited relocation is the overall clustering of the plant being reduced and an improvement of the visual impact associated with the ACC as it is now even better screened by the adjacent TAD plant.

As submitted

As proposed
Turbine Hall

The approval of the planning application has allowed for the final selection of the turbine to be made and the manufacturer has issued guidance on maintenance and safe operation. As a result of this guidance, the turbine should be installed with an overhead travelling crane for future maintenance. The flat roof of the turbine hall will be raised by approximately 5m to 13.06m to accommodate the overhead travelling crane. This change will not be visible from any aspect as the turbine hall remains below the main plant building height, below the height of the ACC and is screened by the adjacent TAD plant and landscape to the south and west of the plant. The submitted drawings also included roof mounted coolers above the turbine building which gave an overall height of some 11.5m therefore the actual increase is less than 1.6m.

As submitted
As planned
Electricity sub-station

The approved planning drawing showed the location of the site transformer. Since WPD have now increased their level of engagement more detail on their requirements for connection to the grid have now been made available. WPD require a brick built structure to contain and protect the switchgear associated with the provision of the 33kV electrical connection.

The proposed structure measures 10.7m x 10m x 6.8m to the roof apex with a smaller annex 5.3m x 4.1m x 4.95m to its roof apex as per drawing B34629T-PL04 rev G. It will be brick faced to comply with the requirements of WPD and have a pitched roof with fibre cement slates.

Security and access doors will be provided to the various switch rooms as shown on the drawing.

The building will form one side of a compound having a 2m high fenced area to enclose the site transformer.

The proposed structure has been reviewed by Western Power Distribution and meets their design criteria for this requirement.

The building will be located as shown on drawing B34629T-PL01 rev E. This location reduces transmission losses and improves the fault protection.

As submitted
As planned
Weighbridge location

A flush mounted weighbridge will be installed outside the feedstock reception hall to satisfy the requirements of Ofgem (the regulatory body). The weighbridge will be suitable for use by articulated vehicles. As it is flush mounted it will be installed in a pit and be connected to the site drainage scheme. This weighbridge facilitated the removal of the feedstock transfer conveyor as identified in paragraph 3.0.

The weighbridge will be located as shown on drawing B34629T-PL01 rev E.
Fire Water Storage Tanks

Following discussions with the local Fire Officer, Insurers and fire suppression specialist advisors; the requirement for fire water storage has now been determined, this has resulted in the requirement for a greater capacity of water storage. These fire water tanks are now included on the drawings. It is proposed that two sectional agricultural style covered tanks and associated pumping equipment be installed at the western end of the facility as shown on drawing B34629T-PL01 rev E. These tanks are anticipated to be 10m diameter and 8m high and are in-keeping with similar agricultural tanks in the locality, these are hidden from view by the embankment and the TAD facility.
**Propane Storage**

To comply with safety regulations and to improve access for deliveries the propane storage area has been relocated slightly from its original location. The position is as shown on drawing B34629T-PL01 rev E.

As submitted

As proposed
Office roofline

To aid construction and future maintenance the office roofline has been amended from a flat roof to a single pitched construction. This does not affect the visual impact of the building. This is shown on drawing B34629T-PL03 rev E.

As submitted

As proposed
Feedstock Reception Hall to Plant roofline

To improve the transfer of material from the feedstock reception hall to the plant hall a change to the roof is required at the junction of the two buildings. This change will follow the original slope to form a single pitched roof locally for the conveying equipment only. This is shown on drawing B34629T-PL03 rev E.

As submitted

As proposed
4.0 Visual Impact

The overall changes to the plant layout described above have either improved or have not materially affected the visual impact of the scheme.

Much of the plant remains unchanged in its design and indeed elements such as the inclined conveyor have been removed. To further improve the visual impact the clustering of the plant along its longest elevation has been reduced. While the turbine hall requires an adjustment to its height, this remains hidden in all views by the ACC, the plant building and the bunding to the south and west.

The addition of the fire water storage tanks should have no additional visual impact as these are screened by other structures in the scheme.

5.0 Materials

The materials for the construction of the facility will remain as per the original application and will be submitted for approval as per the requirements of condition 10 of the current planning permission.

6.0 Conclusion

The minor and non material changes to accommodate the detailed design works of the EPC contractor and WPD as reflected in the above have provided improvements to the scheme. While the improvement to the visual impact is not substantial it does indeed provide a reduced footprint to the overall clustering of the buildings.

To ensure that the conditions of the current permission are discharged it would seem appropriate to revise the conditions to reflect the drawings submitted as part of this application for a S96A Non-Material Amendment.

Drawing GPP/C/PH/REGF/13/06 revision 5 to be replaced with B34629T-PL03 rev E (referred to in condition 8)
Drawing GPP/C/PH/REGF/13/04 revision 6 to be replaced with B34629T-PL01 rev E (referred to in condition 10 and 14)