Viridor Waste Management

Planning Statement

Wootton Environmental Compound DRAFT

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1. Introduction

1.1 This report has been prepared in support of a planning application seeking permission for the development of a Short Term Operating Reserve Facility (STOR) on land at the Environmental Compound, Wootton Quarry and Landfill Site, Grange Park Northampton.

1.2 The report considers the planning merits of the scheme, including the design and access requirements and should be read in conjunction with the plans and other submitted material forming the complete application.

1.3 It provides an overview of the site location and discusses the background to the STOR facility, including an explanation of why such schemes are required. The details of the STOR are then discussed in detail, including the design and access requirements, as well as potential impacts.

1.4 We have then considered relevant planning policies before assessing the STOR proposals against environmental and policy considerations to fully explore the proposal.

1.5 The report then offers our conclusions.

2. Site location

2.1 The site is located to the south of Wootton, off of the A45 (London Road). The site comprises an existing Environmental control compound, which is on the eastern side of a link road leading to the A45. The application site is accessed via a gravel surfaced track off of the link road.

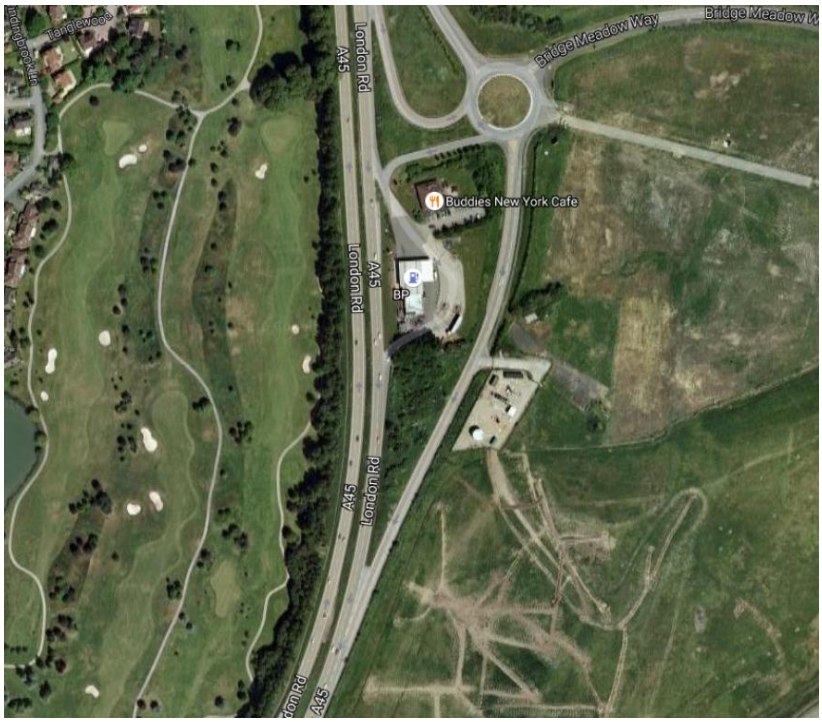

Figure 1: extract showing the location for the proposed STOR facility.

2.2 The application site comprises brownfield land forming part of the Environmental Control Compound associated with the closed Wootton Landfil site.

Planning History

2.3 The existing Environmental gas compound was approved under planning permission SN/01/1548C in November 2002. Approved drawing C2354/PA/02A Rev B and a copy of the planning permission is attached.

Approved drawing C2354/PA/02A Rev B shows the approved gas plant, which includes two engine, yet only one has been installed. The Drawing also includes annotations for control room and transformer in close proximity to the engine. This permission is live.

3. Project background

3.1 The electricity network in the UK is based upon post war infrastructure, and consists of various coal, gas and nuclear power stations scattered around the Country that provide the bulk of the power generation, supported by smaller scale renewable technologies such as wind power, photovoltaics and anaerobic digestion.

3.2 The electricity is distributed through the national grid, or supergrid at either 400 kV (Kilovolt), 275 kV or 132 kV. This supply is then stepped down through transformers to 66 kV, before being stepped down again to customer supply levels at 33 kV or 11 kV. There is a general 'flow' of electricity from north to south, from where the greatest generation takes place to areas of greatest demand.

3.3 The demand for power is constantly changing depending upon the time of day, localised events, weather conditions and numerous other factors. The power supply can vary as it reacts to the loads being placed upon it, often seen in the home as lights dim slightly or flare brighter for short periods. This is caused by the network adjusting to the load conditions and ensuring that the average power supply remains as constant as possible. In rural areas where the distances covered by individual power lines connecting villages are greater, compared to more densely populated cities, the effects of load fluctuations and supply outages can be more frequent.

3.4 This reinforcement of the power supply was historically done by holding large scale generators on standby at power stations, ready to start feeding extra power into the grid network when demand dictated. However, keeping these large generators in a state of readiness meant that the generator itself has to be kept spinning, comparable to an engine permanently on tick over. As such, even in standby, these generators use power and fuel and therefore produce carbon emissions. The generators were also located in key positions at power plants, often at some distance from where the demand for power re-enforcement is required.

3.5 As the UK has moved towards greater use of low carbon and renewable generation technologies to supply the National Grid, greater variables have been introduced that can impact upon the supply of energy within the network. Renewable energy reliant upon the wind blowing or the sun shining is less constant and can vary throughout the day and night depending upon weather conditions. By comparison, carbon generation technologies such as burning coal to drive a steam turbine were relatively stable and the power generated could be predicted well in advance.

3.6 The UK has to become more reliant upon low carbon technologies, which are essential to address climate change and ensure that the Country has long term energy security. This transition has created a need for additional balancing capacity to provide short term electricity generation into the grid at times of peak demand and ensure that the supply is stable and constant.

3.7 This is where the Short Term Operational Reserve (STOR) comes in, which is a short term demand technology that compliments green energy technologies.

4. Short Term Operating Reserve (STOR)

Summary of the project

4.1 The STOR project consists of the installation of a number of energy generation units, which would respond to short term fluctuations in the electricity loading passing through the electricity grid network.

4.2 The equipment is held in standby and is only operational when a shortfall in the power supply is identified. The generators are then remotely turned on by a computer controlled system and quickly power up to meet the shortfall in the local grid network, in effect smoothing out fluctuations in the supply of power whilst the larger power station generators spool up to meet demand.

4.3 The STOR would only be operational at times of need, and then it could only be for short periods, often an hour or less. However, if the circumstances dictate that the STOR is required for longer periods then it must be able to meet that demand, and as such it cannot be prevented from operating to fulfil the demands placed on the electricity supply network, in much the same way that a power station is expected to operate on demand at any time.

4.4 Although the plant is available to the National Grid for operation 24 hrs/day, generally, it will only run for short periods of times with long periods between operating. The National Grid's Annual Market Report shows that in 2012/13 the average time for a STOR calloff (when the National Grid instructs a STOR provider to deliver the contracted STOR MW) was 85 minutes.

4.5 The STOR scheme have environmental benefits associated with them for a number of reasons:

- Having smaller STOR generators distributed around the network is more efficient than having large centralised generators at the power stations.
- The STOR equipment is much smaller and takes less time to go from standby to fully operational compared to a much larger machine.
- The STORs are located on the customer distribution network, rather than the high voltage transmission network, so the electricity is fed into the local system faster and without the transmission losses that are associated with centralised generation.
- The smaller generators can operate from a cold start and do not need to be kept in an operational state on tick over, as is the case with the larger centralised generators.

These factors all contribute to make the system more responsive, more resilient and more efficient.

Site requirements

4.6 In order to make the STOR operationally efficient it has to be within close proximately of the local electricity supply network, typically a 33 kV line with capacity to accept the electricity input.

4.7 Selecting a location for a STOR development involves the combination of a number of factors including:

- Close prominently to a suitable electricity line allowing access to the grid.
- An area of relatively level land.

- Ideally a remote location where there are no close neighbours.
- Existing natural screening or the ability to screen the site from view.
- Access to the road network to aid construction and decommissioning.
- Ownership or an agreement with a landowner to lease the site and allow the installation of the equipment for the duration of the scheme.

4.8 All of these factors have been carefully considered when selecting the location for the development at Wootton.

Scheme Duration

4.9 The STOR facility would be for a temporary period, typically up to 25 years is sought as an operational lifespan. Following this time, the equipment would be removed and the land returned to its current state. A planning permission would therefore need to allow for the operational lifespan and then set a timeframe, usually 12 months for the site to be restored, or sooner if the equipment is no longer in use.

Description of works

4.10 The planning application seeks permission for a STOR development with an operational capacity of approximately 2 MW connected via 33 kV line directly to the local electricity grid.

4.11 The description of the development sought by this planning application is as follows:

"Planning permission for the placement of a Short Term Operational Reserve, including ground works, placement of a generating engine, a transformer and a gas kiosk and other associated works."

4.12 The scheme would include the following key elements:

- Trenching for cables
- Installation of engine, transformer and kiosk

4.13 The gas main will be installed by statutory undertakers under permitted development rights, Part 15 Class A. The gas main will be installed up to the proposed gas kiosk.

4.14 Some trenching will be required within the existing compound. Any new cables shall be buried at a sufficient depth to avoid being damaged by any disturbance of the ground reasonably likely to occur.

4.15 The proposed Gas Kiosk will measure approximately 3m by 3m and will be around 2.3m high. The Gas Kiosk will house metering and associated valving and filters. The gas kiosk is needed for to house this plant in a secure environment, protected from element.

4.16 The proposed Transformer will measure approximately 2m by 2m and be approximately 2m high. The purpose of the transformer is to convert the power generated at 415V to 11,000V for export.

4.17 The proposed engine will measure approximately 12m by 3m, with a maximum height of some elements being 4.3m. The engine will fuelled by natural gas and use conventional spark ignition technology to burn the fuel which in turn rotates the generator creating the electricity which is then exported to support the local electricity network. As the fuel is a natural gas, the exhaust emissions are similar to those expelled by a conventional gas-fired central heating boiler. The heat generated by the engines is dissipated in radiators cooled by electric fans. The engine cooling system is a closed loop water system which continues for as long as the plant is operating.

The siting for the proposed engine already benefits from planning permission under reference SN/01/1548C.

5 Design and Access requirements

5.1 This section of the supporting statement covers the design and access aspects of the scheme, including the use, layout, scale. Traffic has been considered in terms of the construction traffic and that generated during normal operation.

Use

5.2 The site is brownfield land that currently comprises the Environmental Gas compound associated with the closed Wootton Landfill site.

Layout and scale

5.3 The layout of the scheme can be seen on the plans accompanying the planning application. Overall, the land area required for the scheme is relatively small at 91m2. The built form on the site will be within the existing compound as approved.

5.4 The fencing around the perimeter of the site would be as existing – no change is being proposed. The scheme is considered to be low lying, will not be intrusive within the landscape and infrastructure.

5.5 In terms of scale, the development is considered to be suitable for the location, both when considering the footprint of the scheme and the overall height of the development.

5.6 The layout of the STOR has been designed so that the engine is place parallel to the existing engine, allowing access to maintenance vehicles for repair or replacements to be made with ease.

Access

5.7 Access to the site is off of the A45 (London Road) via a link road. The application site is accessed via a gravel surfaced track off of the link road. This access already exists. No new access is required.

5.8 There would be no public access to the development for security and safety reasons.

5.9 There are no footpaths on the site or in the vicinity and no footpaths are affected by the development.

6 Construction Impact

6.1 The construction of the proposed development will take approximately 10 weeks. All delivery traffic will be routed to and from the site via the A45 which leads directly to the site via a link road.

6.2 Construction staff will be provided with a designated car parking area within the site and no construction vehicles will be allowed to park outside of this area.

6.3 In total up to 4 HGV movements will be required to deliver all equipment and materials to the site during the delivery stage of construction. This would be spread out over approximately 10 days in order to minimise the amount of equipment stored on site.

7 Operational Impact

7.1 This application seeks permission for the installation of an engine, transformer and a gas kiosk. The engine would be in place of the second engine approved under permission SN/01/1548C, as shown on the approved drawing, which has not been placed at the site. Permission SN/01/1548C is live. The potential noise and other environmental impacts from a second engine have already been addressed under permission SN/01/1548C.

7.2 Consideration needs to be given to potential impact from the proposed Kiosk and Transformer. It is not anticipated that these components will add significantly to the existing noise levels of the Environmental Compound. Condition 5 of permission SN/01/1548C could be replicated on any forthcoming permission.

The plant will be maintained alongside the existing landfill gas fuelled generators utilising the same service teams and no additional journeys for operation or maintenance are proposed.

8 Planning Policy Review

8.1 Section 38 (6) of the Planning and Compulsory Purchase Act 2004, states that: "If regard is to be had to the development plan for the purpose of any determination to be made under the planning acts the determination must be made in accordance with the development plan unless material considerations indicate otherwise."

8.2 The development Plan for the site includes the following adopted Plans:

- The Northamptonshire Minerals and Waste Local Plan (MWLP)
- The West Northamptonshire Joint Core Strategy Local Plan (Part 1)

Other Policy Considerations

8.3 National policy that is considered material to the assessment of the proposal includes the following:

- National Planning Policy Framework ('NPPF') (CLG; 2012);
- Overarching National Policy Statement for Energy EN1 ('NPS') (Department of Energy and Climate Change; 2011); and
- Electricity Market Reform ('EMR') (Department of Energy and Climate Change; 2012).

Assessment

Northamptonshire Minerals and Waste Local Plan

8.4 The Northamptonshire Minerals and Waste Local Plan (MWLP) sets out the strategy, policies and locations for minerals and waste development in Northamptonshire to 2031. It was adopted in October 2014.

8.5 Policy 15 identifies sites for waste management use which are in or adjacent to urban areas. Site WS5: Northampton Grange Road includes the area which is subject of this application. The inclusion of this site indicated acceptability of the principle of development at this location.

West Northamptonshire Joint Core Strategy Local Plan (Part 1)

8.6 The West Northamptonshire Joint Core Strategy Local Plan (Part 1) was Adopted in December 2014. The Joint Core Strategy sets out the long-term vision and objectives for the whole of the West Northamptonshire area for the plan period up to 2029, and includes strategic policies to steer and shape development

8.7 Objective 1 - Climate Change seeks to minimise demand for resources and mitigate and adapt to climate change. One way the plan seeks to achieve this is by encouraging renewable energy production in appropriate locations.

8.8 Policy S10 – Sustainable Development Principles is a general policy on Climate Change and Sustainable Development Principles. The policy looks to maximise the generation of its energy from decentralised and renewable or low carbon sources. The proposed development would clearly meet this overarching objective.

National Planning Policy Framework ('NPPF')

8.9 The NPPF provides an overriding support for proposals which facilitate the transition to a low carbon future and encourages the use of renewable resources (Paragraph 17).

Overarching National Policy Statement for Energy EN1 ('NPS')

8.10 In July 2011, NPS EN-1 was published and presented to Parliament pursuant to Section 5(9) of the Planning Act 2008. This sets out national policy for the energy infrastructure and represents a "material consideration in decision making on applications that fall under the Town and Country Planning Act 1990 (as amended)" (paragraph 1.2.1). Relevant extracts from the NPS include:

- Section 3.6 'The role of fossil fuel power electricity generation' states that fossil fuel power stations play a vital role in providing reliable electricity supplies: they can be operated flexibly in response to changes in supply and demand, and provide diversity in our energy mix. They will continue to play an important role in our energy mix as the UK makes the transition to a low carbon economy (paragraph 3.6.1).
- Further, some of new conventional generating capacity needed is likely to come from new fossil fuel generating capacity in order to maintain security of supply, and to provide flexible back-up for intermittent renewable energy from wind (paragraph 3.6.3).
- Section 3.7 'The need for new electricity network infrastructure' states that fossil fuel generating stations contribute to security of energy supply by using fuel from a variety of suppliers and operating flexibly. Gas will continue to play an important role in the electricity sector – providing vital flexibility to support an increasing amount of low-carbon generation and to maintain security of energy.

Electricity Market Reform ('EMR')

8.11 The EMR was first published as a White Paper in July 2011, designed to deliver low carbon energy and reliable supplies that the UK needs, while minimising costs to consumers. It set out to transform the UK electricity sector to one in which low-carbon generation can compete with conventional, fossil-fuel generation – ensuring we build a cleaner, more sustainable energy mix.

8.12 The EMR introduced the CM mechanism in 2014 which is to provide a regular retainer payment to reliable forms of capacity, in return for such capacity being available when the supply is tight. In short, the overall aim of the CM is to enhance the security of electricity supply by ensuing that sufficient reliable capacity is in place to meet demand.

8.13 Given this supportive national policy context, and the role that STOR facilities perform in enhancing the security of electricity supply to the local and national network it is considered that there is a strong need for this form of development.

9.0 Conclusion

9.1 The proposed development comprises the installation of an engine, transformer and a gas kiosk, with associated trenching for cabling. The proposed works will be contained within the existing Environmental Compound at Wootton.

9.2 The impact of a second engine at the site has already been considered at this location under permission SN/01/1548C. The only additional elements are therefore the proposed kiosk and transformer. There is no anticipated significant environmental impacts of these components.

9.3 The proposed STOR would perform a vital role in ensuring a consistency in local electricity supply during times where renewable energy sources alone cannot meet demand or when there is a 'spike' in demand in the national grid.

9.4 The Government recognises the importance of these types of energy power plants in providing reliable electricity supplies that can be operated flexibly to meet changes in supply and demand. These are seen as playing an important role in supporting the UK's energy mix and the transition to a low carbon economy. The proposal would therefore meet a national and local need.