SRF 022

PLANNING, DESIGN & ACCESS STATEMENT

In respect of:

SHORT TERM OPERATING RESERVE AND ANCILLARY WORKS

LAND AT WHALEY ROAD, BARNSLEY

On behalf of:

PEAK POWER CONNECTIONS

Ref: RCA400g

Date: September 2016

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EXECUTIVE SUMMARY

This Planning, Design and Access Statement is submitted in support of a planning application for a Short Term Operating Reserve (STOR) power generating facility including fencing and associated plant on land off Whaley Road, Barnsley.

The purpose of this statement is to provide an assessment of the proposed development against the relevant policies of the Development Plan, taking into account any relevant material considerations and site constraints in demonstrating that planning permission should be granted.

The site is located within an established industrial area along Whaley Road, the immediate industrial area is linear in shape, bounded by Whaley Road and the A637. To the west-north-west of the A637, is a mixture of warehouse and residential. To the east of Whaley Road, is a concrete manufacturing plant.

The site is not subject to a local ecological designation (such as a SINC) and is unconstrained by heritage or conservation designations and is not subject to any formal statutory protection.

Notwithstanding this, noise, air quality and ecological reports have been commissioned and are submitted with this application.

The proposed facility will be used to provide emergency reserve electricity to the National Grid, at times when the level of national electricity demand exceeds the level of available supply from base load power stations. For this reason, the facility will only operate intermittently according to remote request during an 'energy gap'.

It is respectfully requested that the council support these proposals and grant permission without delay.

1.0 INTRODUCTION

1.1 This Planning, Design and Access Statement supports a planning application for the development of a STOR power generating facility on land at Whaley Road, Barnsley (the site) submitted on behalf of Peak Power Ltd (the applicant) by RCA Regeneration (the Agent).

1.2 At less than 0.5 ha in size, the development falls outside the provisions of Schedule 2 of the Town and Country Planning (Environmental Impact) Regulations 2011 and therefore does not constitute EIA development.

1.3 The full details of the proposed development are set out on the following plans, drawings and reports accompanying this submission:

- Site Location Plan
- Proposed Plans and Elevations
- Air Quality Report
- Noise/Acoustics Report
- Ecological PEA
- SuDS Assessment

1.4 The National Grid has a number of plants across the country capable of producing small amounts of electricity at short notice. This proposal will be such a plant.

2.0 SITE DESCRIPTION AND PROPOSED DEVELOPMENT

2.1 The site is an area currently used for industrial storage near to a number of major industrial premises and is effectively surrounded by industrial activity. A pocket of residential dwellings sits further away to the north west of the site, but should not suffer any significant impacts from this proposal as existing industrial uses sit in between. The wider area is also referred to as South Yorkshire (Redbrook) Industrial Estate.

2.2 The vacant site is rectangular in shape, bounded by industrial uses to the north and south and also bounded in part to the east by low level shrubs and self-seeded trees.

2.3 Beyond the industrial estate, there is open countryside and residential land, however the proposal is buffered by the surrounding existing industrial and warehouse uses therefore does not have a direct impact on the amenity of the area.

Outline Description

2.4 The proposal is for Duel Fuel Short Term Operating Reserve Electricity Generating Station with an output of up to 20MW, consisting of 11 duel fuel generators enclosed within galvenised steel containers and associated operating units such as fuel stores and switchgear containers (please refer to Architectural plans and elevations).

2.5 The generators are duel fuel and thus have the ability to run on gas and diesel. However, for the purposes of planning, ecology and air quality it is assumed that the generators will be fueled by diesel only and a 'worst case scenario' for potential impacts has been assessed, however, no significant impacts arise from this scenario (see accompanying reports).

2.6 The site will be bounded by a 4.5m high timber acoustic fence. The proposal will be connected to the National Grid via a connection operated by Western Power Distribution (WPD). The connection works include transformers and meter connections which WPD will undertake in their role as a statutory undertaker.

2.7 The containers will be temporary structures and so no excavation or groundworks will be required.

Access and Operational Requirements

4.1 The site will be accessed via Whaley Road. Access is demonstrated on the site boundary and access plan (G000237-1002-A-D01) submitted alongside this Statement.

4.2 An electrical grid connection is available nearby to enable the export of electricity generated to the Grid.

Flood Risk and Drainage

4.3 The site is below 1ha and as such an FRA is not required. However, the Core Strategy requires all new proposals to include sustainable urban drainage systems where practicable, an assessment will accompany this application. The site is located in Flood Zone 1 and as such is not in an area prone to flooding.

Security

4.4 The plant will be secure, housing within bespoke containers and surrounded by 4.5m timber acoustic fencing. A CCTV system will be operational covering the internal part of the site and boundary.

4.5 In the event of a leak or fire a shut off value will operate to ensure that fuel supply is cut off to the main plant. An alarm will be fitted to a remote control facility to advise of such events.

Landscaping

4.6 The application site benefits from strong green landscape buffers, particularly to the north and south and it is proposed that these will be maintained wherever practicable.

Employment

4.7 The proposals will generate employment in the short term through the construction phase. Whilst the facility will be unmanned, there will be a network of maintenance personnel involved in regular visits to the site, and this development will secure their employment in the longer term.

2.8 Operation

2.9 STOR installations are flexible units (they can be brought on line within 2 minutes), smaller, much quicker to build (6 months as opposed to 5-10 years) and more economic than conventional large fossil fuel or nuclear power stations. Being distributed throughout the country, small scale and close to the point of use, they are unobtrusive and require minimum additional infrastructure such as pylons and sub-stations.

2.10 The proposed facility will have a capacity to generate up to 20MW, operating between 200-500 hours per year. The generators are intended to offer additional power to the national grid during peak periods of demand. The generators will not operate between the hours of 11pm and 6am except when there is a **national emergency** on the national grid network caused by a Fast Frequency response due to a failure of a major power station or part of the national grid network being stressed. The generator sets will run automatically for a period of 30 minutes to allow the National grid to increase supply from main power stations.

2.11 Expected operation would in fact be no more than approximately 2 hours per day, typically between the peak demand hours of 4pm-7pm during the winter months of November to February.

2.12 At times when there is sufficient supply of electricity within the National Grid to meet demand, the facility will generate electricity which will then go back into the Grid.

2.13 The process of communication between the facility and the National Grid will be fully automated. Once installed the site will require only infrequent visits for the purposes of maintenance. These visits by an engineer are unlikely to exceed one visit per month on average whilst fuel deliveries to the site will not exceed ten visits per year. To that end, a transport statement is unnecessary.

2.14 The diesel tanks will have a total capacity of 90,000l which are constructed to the design standards for containers set out in the Environmental Management Guidance – Oil Storage Regulations for Business[1]. Fixed tanks must meet the British Standard 5140 or, Oil Firing Technical Association (OFTEC) standard OFS T200 or British Standard 799-5 if the container is metal.

Emissions Full Diesel Operation

2.15 Air Quality Assessment/Emissions The MTU (a Rolls Royce owned company) dual fuel engines that will be used, Type 16V4000 G63, are modern, high efficiency machines and will operate in emission optimised mode. The exhaust gas emissions in full diesel mode are certified to fall within the following limits at continuous power and nominal speed:

- NOx 1638mg/m^3 at 5% O_2
- CO 178mg/m^3 at 5% O_2
- HC 46mg/m^3
- Dust 50mg/m^3 at 5% O_2
- Formaldehyde 60mg/m^3 at 5% O_2

[1] https://www.gov.uk/guidance/storing-oil-at-a-home-or-business

Noise Impact/Acoustics

2.16 Each of the generator units, comprising the above engine plus generator, cooling and associated equipment, are mounted with an acoustic containerised enclosure as the Himoinsa HMW-2200-T5 model with the following parameters:

- dB(A)@1m 80 FFC
- LWA 102
- Dimensions 12192 x 2438 x 2896 mm
- Weight 25880 kg

3.0 THE NEED FOR SHORT TERM OPERATING RESERVE

3.1 The National Grid has a statutory duty to ensure that the supply of electricity in the United Kingdom remains within certain limits in relation to demand. The balance of supply and demand within the Grid is known as system 'frequency'. Frequency is continuously changing as levels of electricity generation and consumption fluctuate. At times, the generation from baseload power stations is insufficient to meet demand when there are spikes in consumption. There are also times when baseload generation unexpectedly becomes unavailable, with the same effect.

3.2 In order to avoid the need for rolling blackouts and other extreme demand control measures at these times, the National Grid procures a range of Balancing Services. These include demand response services (where large electricity consumers agree to reduce their consumption during low frequency events), and operating reserve (where distributed standby generators operate only when called on to do so).

Predicted Frequency Response Requirements

3.3 System inertia is the measure of the vulnerability of the National Grid to occasions of low frequency when balancing (or 'frequency response') will be required. As system inertia reduces, change in system frequency will become more regular and a larger provision of frequency response will be required to maintain stability.

3.4 The National Grid's forecast of its system requirements is set out in the System Operability Framework (SOF), most recently published in November 2015. Section 4.4 of the SOF sets out the expectation of National Grid for Frequency Response Providers, they are *"scheduled to alter generation or demand to redress the demand-supply mismatch cause by an unexpected event on the system such as the loss of a generator"*. The most recent SOF identifies that, taking into account all future energy scenarios modelled by the National Grid, "*the amount of frequency response required will increase by 3 to 4 times from the current level"* by 2030.

3.5 In addition to the medium-term requirements beyond 2020, the National Grid has identified that "*under all scenarios response requirements increase by approximately 30% - 40% within the next five years"* – from 2015 to 2020.

3.6 Figure 1 below (adapted from Figure 18 of the SOF) illustrates the predicted response requirements for each scenario.

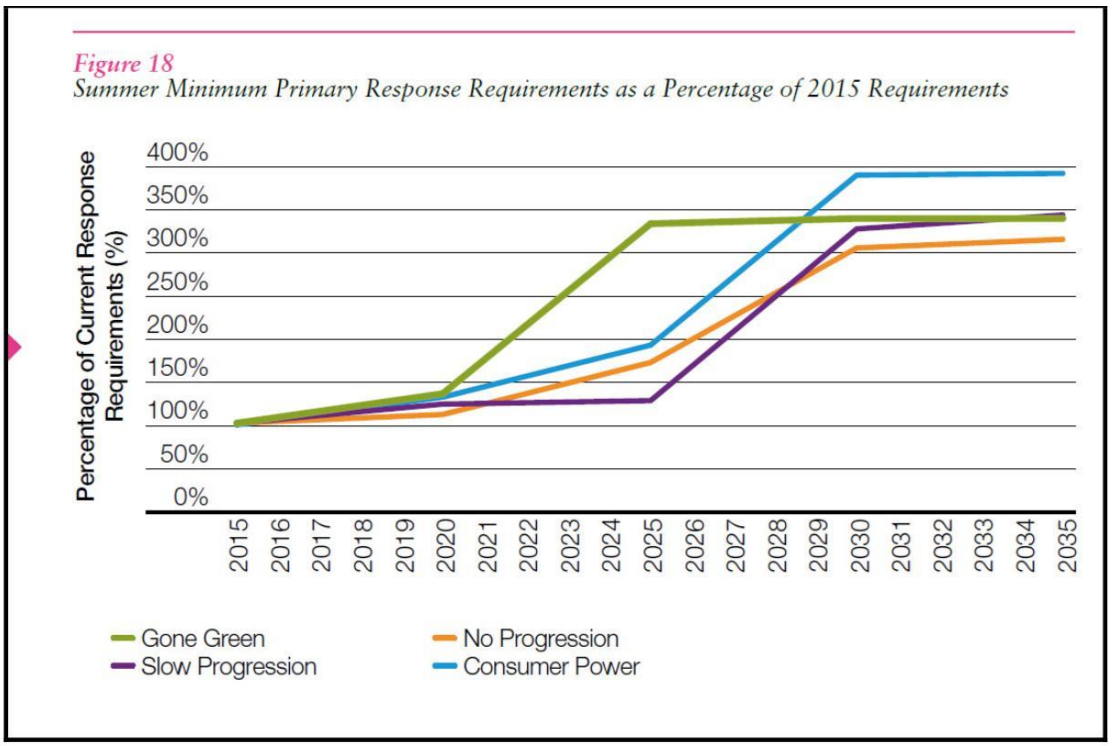

Figure 1 National Grid System Operability Framework Nov 2015

3.7 There is an urgent need for new frequency response assets to be secured in order to provide sufficient capacity for the National Grid to balance supply and demand in the short term (2015 to 2020) and medium term (2020 to 2030). National Grid's approach is to procure these requirements through the Capacity Market mechanism from third parties who will develop and operate facilities.

3.8 As the long-term aim is to move towards more renewable energy sources and greater amounts of wind generation is added to the system, National Grid expects the level of required Short Term Operating Reserve will increase from 4GW to cope with unexpected real time changes. Peak Power Connections Ltd is one such organisation promoting these facilities.

3.9 Due to a need for locations in proximity to viable Grid connections, sites providing STOR will be widely distributed across the country. There are significant constraints

on the availability of sufficient Grid connection capacity UK-wide, and this will also limit the range of feasible sites. The National Grid also has specific requirements for providers including:

- There must be a valid Grid connection offer in place;
- The applicant must have a legal right to use the land;
- The proposed technology must meet the technical criteria; and
- applicants must be able to demonstrate that financing is in place.

3.10 As a result of these factors, significant favourable weight should be accorded to all proposals in locations where there is a Grid connection offer in place and which adjoin or are in close proximity to an existing connection point.

4.0 LOCAL DEVELOPMENT PLAN AND MATERIAL CONSIDERATIONS

4.1 Section 38(6) of the Planning and Compulsory Purchase Act 2004 (as amended) state that determination of applications made under the Act must be made in accordance with the development plan, unless material considerations indicate otherwise.

Local Development Plan, Barnsley Metropolitan Borough Council Core Strategy

4.2 The Core Strategy for Barnsley Metropolitan Borough Council was adopted on 8 September 2011 and covers the period up to 2026. The following policies are of relevance to this application.

4.3 CSP 1 Climate Change; the strategy sets out to reduce the impact on climate change by reducing and mitigating the impact of growth on the environment, ensure communities are resilient to climate change, giving preference to development in sustainable locations and promote the use of sustainable drainage systems.

4.4 CSP 2 Sustainable construction; development is expected to demonstrate how it minimises resource and energy consumption.

4.5 CSP 3 Sustainable Drainage Systems (SUDS); all development is expected to use SUDS except where it is impracticable to do so, other drainage systems will be permitted. Applications will require an assessment to show that SUDS will work and be maintained.

4.6 CSP 8 The Location of Growth; priority is given to development within Urban Barnsley and Principal towns. A Settlement hierarchy has been put into place.

4.7 CSP 19 Protecting Existing Employment Land; redevelopment of employment land and buildings for non-employment uses will only take place where redevelopment will not result in a loss of jobs and there is still an adequate supply of employment land in the locality.

4.8 CSP29 Design; this policy sets out criteria that development must adhere to such as be at a scale, character, layout and building style similar to surrounding areas. Be integrated, sustainable, make efficient use of resources, flexible to future needs and have no adverse impacts on the surrounding area.

4.9 CSP40 Pollution Control and Protection; this policy will not allow development which will negatively affect or cause a nuisance to the natural environment or people from noise, smell, dust, vibration or air pollution. Developers must take action to reduce the effects of possible pollution and provide mitigation measures.

4.10 It is our view that the site in question is in accordance with local policy, it contributes towards achieving the principles of sustainable development through the reuse of brownfield sites and though some impacts may occur, they will be attenuated and it is expected that reasonable and appropriate conditions will be applied. The site is located in such a position that allows for a suitable connection to the National Grid and will not significantly impact on the amenity of neighbouring properties or wider residential areas.

National Planning Policy Framework (the Framework)

4.11 The overarching principle of the Framework is a presumption in favour of sustainable development. For decision making this means, where the development plan is absent, silent or relevant policies are out-of-date, granting permission unless any adverse impacts of doing so would significantly and demonstrably outweigh the benefits. (Paragraph 14)

4.12 Paragraph 17 sets out the core planning principles which under-pin plan-making and decision taking of relevance to this application, it states that planning should "*proactively drive and support sustainable economic development*" in order to meet the country's development needs, including infrastructure. The policy expects planning to "*support the transition to a low carbon future in a changing climate, take full account of flood risk… and encourage the reuse of existing resources…and the use of renewable resources".*

4.13 Section 10 of the Framework sets out how to meet the challenge of climate, change, flooding and coastal change. Supporting the delivery of renewable and low carbon energy and associated infrastructure, minimising vulnerability and providing resilience is central to the economic, social and environmental dimensions of sustainable development (paragraph 93).

4.14 Paragraph 98 goes on to explain when determining applications, local authorities "should not require applicants for energy development to demonstrate the overall need for renewable or low carbon energy and also recognise that small scale projects provide a valuable contribution to cutting greenhouse gas emissions."

4.15 Section 11 of the Framework seeks to conserve and enhance the natural environment by protecting and enhancing valued landscapes, geological conservation interests and soils and minimise impacts on biodiversity. Though in paragraph 116 the framework indicates that planning permission should be refused for major developments in designated areas, it can be granted in exceptional circumstances where it can be demonstrated the development is in the public interest. Consideration of such applications should include an assessment of:

- *The need for the development, including in terms of national considerations, and the impact of permitting it, or refusing it, upon the local economy;*
- *The cost of, and scope for, developing elsewhere outside the designated area, or meeting the need for it in some other way; and*
- *Any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated.*

4.16 In the circumstance that harm resulting from a development cannot be avoided, paragraph 118 requires local authorities should, unless adequately mitigated or compensated for refuse permission.

4.17 Paragraph 120 goes on to explain that when decision making, local authorities when considering if the development is appropriate for its location should take into account the "*effects (including cumulative effects) of pollution on health, the natural environment, or general amenity and the potential sensitivity of the area".*

4.18 Paragraph 122 wants Local authorities to "focus on whether the development itself is an acceptable use of the land, and the impact of the use, rather than the control of processes or emissions themselves where these are subject to approval under pollution control regimes. Local authorities should assume that these regimes will operate effectively".

4.19 Therefore, this site is in accordance with the Framework as it aligns with the principles of sustainable development through the re-use of brownfield sites and contributes to the move towards a low-carbon future by supporting peak demand spikes and troughs in the National Grid Network during the transition to renewable and low carbon sources. Though the policy does not require need to be demonstrated, there is an overarching need identified by National Grid for such developments and as such we believe that this proposal should be granted permission.

National Policy Statements

4.20 Paragraph 1.2.3 of National Policy Statement for Electricity Networks EN5 explains the policy statement in conjunction with EN1 may be helpful to Local Authorities in England when deciding applications under the Town and Country Planning Act 1990 (as amended) and is likely to be considered a material consideration.

"*Under existing planning law, decisions by LPAs on planning applications must be taken in accordance with the development plan unless material considerations indicate otherwise. In cases where development plans have not yet been updated to take account of a particular NPS, the NPS is likely to be a material consideration which the LPA (and the Secretary of State on appeal or call-in) will have to take into account when determining planning applications. Whether or not the NPS is a material consideration in this or any other circumstance and the weight to be applied to it by the decision-maker will have to be determined on a case by case basis." (Letter to Chief Planning Officers, Nov 2009*[2]*)*

[2] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/7989/091109-Letter_to_Chief_Planning_Officers-_National_Policy_Statements.pdf

4.21 The Overarching National Policy Statement for Energy EN1 notes it is critical that the UK continues to have secure and reliable sources of electricity as we make the transition to a low carbon economy.

4.22 Paragraph 2.2.20 highlights the need for energy storage "we need sufficient electricity capacity (including a greater proportion of low carbon generation) to meet demand at all times".

4.23 Paragraph 3.7.2 of EN1 goes on to say "it is likely that demand for electricity will increase significantly over the coming decades. Factors contributing to such growth include the development of new housing and business premises (the number of households in England is projected to grow to 27.8 million by 2031) and the increased use of electricity in domestic and industrial heat and transport. Lack of sufficiently robust electricity networks can cause, or contribute to, large scale interruptions. Existing transmission and distribution networks will have to evolve and adapt in various ways to handle increases in demand."

4.24 Paragraph 3.3.2 and 3.3.3 highlight the Government "needs to ensure sufficient generating electricity capacity is available to meet maximum peak demand, with a safety margin or space capacity to accommodate unexpectedly high demand and to mitigate risks such as unexpected plant closures and extreme weather events… the larger the difference between available capacity and demand, the more resilient the system… and consequently the lower the risk of supply interruption".

4.25 Though these statements are aligned towards Nationally Significant Infrastructure Projects, they highlight the need for energy infrastructure across the board to ensure future security and reliability of energy networks.

5.0 CONCLUSIONS

5.1 This planning application is made for the installation of an STOR power generation facility on land at Whaley Road, Barnsley.

5.2 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 within the national grid.

5.3 The Government recognises the importance of these sources of power generation in providing reliable energy supplies that can respond flexibly to meet changes in demand. They are now seen as a vital part of the UK's energy supply 'mix' in the transition to low carbon economy.

5.4 The proposals meet a national and local need. The proposals are also aligned to local and national planning policy. Having reviewed the technical evidence, it is clear that the application site is unconstrained from an ecological, flood risk, air quality and noise perspective.

5.5 Moreover, the proposal will create jobs and secure longer term employment.

5.6 It is therefore respectfully requested that the Council grant planning permission without delay.