



**Application for the Proposed Development of a Gas Peaking
Plant on Land to the North of National Grid's 275/400kV Legacy
Substation, Talwrn, Wrexham, LL14 4HY**

**DRAFT PLANNING
AND
DESIGN & ACCESS STATEMENT**

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2658-01-013	Fencing & CCTV Cameras
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1.0 INTRODUCTION & BACKGROUND

1.1 Introduction

1.1.1 This draft Planning and Design and Access Statement has been prepared in support of an application made by HG638LEG Limited (hereafter referred to as ‘the Applicant’ or ‘Harbour Energy’) to install and operate eleven 4.5MW gas engines and ancillary equipment on land to the north of National Grid’s 275/400kV Legacy Substation, Talwrn, Wrexham (hereafter referred to as ‘the Site’). The location of the Site is illustrated on Planning Drawing 2656-01-002 and the application boundary is shown on Planning Drawing 2656-01-003.

1.2 Development of National Significance

1.2.1 The Proposed Development is considered a Development of National Significance ('DNS') in Wales due to the proposed facility having a generating capacity of 49.5MW, and thus falling within the DNS capture threshold for energy developments with a generating capacity above 10MW and less than 350MW.

1.2.2 As a DNS, the proposals are required to follow the four stages of the DNS Application process. These stages are summarised as:

- **Stage 1: Pre-Application.** This stage contains three sub-stages:
 - I. *Early Engagement.* Applicants can enter general dialogue with PINS, the LPA and local communities to help better understand the DNS process and flag up any significant potential issues.
 - II. *Notification.* The applicant notifies PINS of their intent to submit a DNS application. This is required to be made prior to both the full submission and the pre-application public consultation.
 - III. *Pre-application Public Consultation.* Prior to submission, the draft proposals are to be publicised and consulted upon with affected communities, stakeholders and the LPA for a period of at least six weeks.
- **Stage 2: Application.** On 1st March 2016, legislation came into force which required all DNS applications to be made directly to Welsh Ministers. Therefore, following statutory pre-application consultation, this application is to be submitted to the Planning Inspectorate Wales ('PINS'), with Wrexham County Borough Council ('WCBC') acting as a statutory consultee in their role as the Local Planning Authority ('LPA'). A Consultation Report is also to be provided, outlining the responses of the pre-application consultation and how they have been

addressed. A validation period of 28 days is given for non-EIA cases. Once the application is made valid, PINS publicises and consults upon the application. The LPA prepares a Local Impact Report during this stage. The applicant then has 10 working days following close of consultation to make any amendments to the application.

- **Stage 3: Examination.** An Inspector is appointed, who will determine the procedure for examination. This will be either written representations, hearing, or inquiry, or a combination of all three. Following examination, the appointed Inspector considers all representations and writes a report to the Welsh Minister recommending whether planning permission should be granted or refused.
- **Stage 4: Decision.** The application is determined by Welsh Ministers and a decision issued.

1.2.3 This DNS Application is currently at Stage 1(iii) and this draft Planning and Design & Access Statement has been prepared in support of the application as it goes through the statutory pre-application consultation process.

1.3 Summary of the Proposed Development

1.3.1 The Proposed Development would have a generating capacity of up to 49.5MW of electricity and would comprises the following elements:

- 11 No. 4.5MWe gas engines within acoustic concrete containers with 12m high exhaust stacks and integrated ventilation;
- Container mounted radiators;
- A Transmission Network Operator ('TNO') metering kiosk;
- A Switchgear Room/Control Room;
- A Site Office and Welfare Facilities;
- A 33KV Electrical Transformer & 2.4m high weldmesh fenced compound;
- An 11KV Electrical Transformer & 2.4m high weldmesh fenced compound;
- 2 No. 13,000 litre Lubrication Oil Tanks (clean and waste tanks);
- A Gas Metering Kiosk;
- 5 No. CCTV monitoring points;
- A short access track from NG substation complex; and
- Parking availability on the proposed areas of hardstanding within the Site.

1.3.2 Consent is sought for a 25-year period after which the facility would be decommissioned, unless further consent is secured. The layout of the Proposed

Development is shown on Planning Drawings 2658-01-004 and 2658-01-005. Proposed elevations are provided on Planning Drawings 2658-01-006, 2658-01-008, 2658-01-009, 2658-01-010, 2658-01-011, 2658-01-012, 2658-01-013 and 2658-01-014.

1.4 Background

- 1.4.1 Sometimes referred to as ‘Peaking’ ‘Flexible Generation’ or ‘Capacity Reserve’ power plants, the Proposed Development would contract with National Grid and supply electricity at short notice during periods of high net demand or system stress. The likelihood of these stress events occurring have increased in recent years with the high deployment of renewable (intermittent) energy generation and the decommissioning of large conventional power stations. As a result, the Welsh and UK Governments have put in place a policy framework and regulations to ensure that there is enough capacity to meet demand, reduce the risk of system faults or power outages and to ensure a stable transmission and distribution network.
- 1.4.2 The Proposed Development will contribute additional capacity to the National Grid, supplying electricity when necessary to help the Welsh and UK governments meet their targets of a low carbon, affordable and secure energy market. This flexible generation plant allows more reliance on intermittent low carbon renewable generation sources due to its rapid start up and ability to deliver 4.5MW to 49.5MW of electrical power to the grid as and when required.
- 1.4.3 National Grid, who own and operate the electricity transmission infrastructure and act as System Operator ('SO') must ensure that the demand is balanced with the supply of electricity across the whole of the UK, on a second by second, real time basis. By way of example, if there is a sudden dip in renewable energy production that coincides with a period of high demand, there is a risk that faults could occur on the transmission or distribution networks causing power outages or damage to the network. To prevent this, National Grid will have to instruct certain generators and consumers to increase generation or reduce demand accordingly. Unlike more conventional base load power generators, the Proposed Development will be able to react very quickly to National Grid's instructions by being able to reach full output within 5 minutes. This quick response time will allow National Grid to react quickly and more efficiently to any short-term changes in demand or supply.
- 1.4.4 The national need for gas peaking plants has been estimated by the Future Energy Scenarios team at National Grid (who are in charge of modelling the energy needs of

the UK for the next 30 years) to be up to 9.5GW. At present, it is estimated that there is only c. 1.5GW of gas peaking plants deployed in the UK, which is substantially below the level required for future energy scenarios. As such there is an urgent need to deliver additional generating capacity to support the increasing deployment of renewable energy generation, to address potential shortfalls associated with delays to new nuclear power stations and to support the move to electric vehicles.

- 1.4.5 The relationship between the National Grid and the Proposed Development would be governed by a Capacity Agreement. This would be procured under a competitive auction (that can only be entered once development consent has been secured for the development) and the Capacity Market Rules. Under the Capacity Agreement the Proposed Development would commit to supply National Grid with up to 49.5MW of electricity during system stress events.
- 1.4.6 In addition to the Capacity Market, the Proposed Development will also supply National Grid with balancing mechanism services, such as Short Term Operating Reserve ('STOR'). These balancing services are forecast to be increasingly important in the future as more renewable generation is deployed. The Proposed Development would represent a large capital investment and would be an important part of the National Grid balancing infrastructure in the UK

1.5 The Applicant

- 1.5.1 The Applicant for the Proposed Development is Harbour Energy. Harbour Energy develops rapid start up mains gas fuelled peaking plants that can respond rapidly to UK electrical demand using very low emissions clean, efficient generators. In addition, Harbour Energy are also developing grid scale battery storage facilities where gas connections are not possible. Harbour Energy have projects across the UK from the South Coast to Glasgow and have secured a number of development opportunities adjacent to National Grid's Super Grid Transformer Substations across the UK. Harbour Energy are also investigating commercial opportunities to power their peaking plants using a mix of natural gas and renewable biomethane produced from anaerobic digestion of waste food and crops etc. The UK biomethane market has seen significant growth over recent years with 146 biomethane plants predicted to be operational by 2020, representing an investment in the region of £1.5 billion. Cadent are working with industry to connect these renewable gas generation facilities to their gas supply infrastructure to increase the amount of renewable gas in the network. In addition, there are pilot schemes to further decarbonise the national gas

supply by blending up to 20% hydrogen. Existing gas engines are designed to accommodate increasing hydrogen content and industry is looking at design modifications to enable 100% hydrogen combustion, if and when a commercial network is available.

- 1.5.2 The Green Gas Certification Scheme ('GGCS') enables biomethane ('green gas') to be tracked through the supply chain, ensuring certainty for those that buy it and enabling peaking plants to generate 'green' energy.
- 1.5.3 National Grid's Super Grid Transformer Substations are strategically important infrastructure, required to maintain power supplies across the UK. Co-location of Peaking Plants with Super Grid Transformer Substations ensures that transmission losses are minimised and that appropriate grid capacity is available for the strategic scale of development required to address the current shortfall in required flexible generation capacity
- 1.5.4 Harbour Energy have carried out a site screening exercise for National Grid's Super Grid Transformer Substations. Of the two hundred and ninety-eight (298) National Grid Super Grid Transformer Substations in the UK, only one hundred and sixty-eight (168) have capacity to accommodate a 49.5MWe gas peaking plant. Of the above 168 locations, only c.55 Super Transformer Substations have a suitable mains gas supply in the immediate vicinity. A significant number of these sites are constrained due to the close proximity of housing or other environmental constraints and, as a consequence, there are only a limited number of sites suitable for gas peaking projects.
- 1.5.5 The proposed location to the north of National Grid's 275/400kV Substation, off Bronwylfa Road, Wrexham is one of Harbour Energy's leading sites due to the availability of suitable gas and grid connections, physical separation from residential property and the significant screening of the site by the landform and mature vegetation that surrounds the Site..

1.6 Scope of the Application

- 1.6.1 The application is contained within this Planning and Design & Access Statement, the Appendices, the planning application forms and certificates, and the planning application drawings.

1.6.2 This statement is divided into thirteen main sections, of which this introduction is Section 1.0. Section 2.0 provides a description of the Site and its context, Section 3.0 provides a description of the key components of the Proposed Development and Section 4.0 sets out the planning history for the Site. Section 5.0 assesses the need for and benefits of the Proposed Development and Sections 6.0 – 12.0 address the potential issues of noise, air quality, landscape and visual, ecology, contamination, drainage and arboriculture respectively. Section 13.0 provides an appraisal of the key planning context against which this application should be determined and assesses the extent to which the Proposed Development accords with planning policy and other material considerations. Section 14.0 concludes with an assessment of the suitability of the Proposed Development at the Site.

1.7 EIA Screening

- 1.7.1 In accordance with part (e) of Regulation 31 of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017, a screening request is required for the Proposed Development for the purposes of section 62D of the Town and Country Planning Act 1990. In accordance with the ‘Developments of National Significance Procedural Guidance’ (under Appendix 3: Environmental Impact Assessment) the screening request is to be made to PINS.
- 1.7.2 A screening request for the Proposed Development was submitted on 23rd April 2020 and a Screening Opinion was issued by PINS on 11th May 2020. The Screening Opinion concluded that the Proposed Development **should not** be subject to an Environmental Impact Assessment. Therefore, an Environmental Statement has not been submitted with this application. A full copy of this Screening Opinion along with the consultation responses can be viewed under Appendix H to this Statement.

2.0 THE SITE AND ITS CONTEXT

- 2.1.1 The Site is located to the north of and adjacent to National Grid's (NG) substation off the B5426 (Bronwylfa Road), Talwrn, Wrexham. The location of the Site is shown on Planning Drawing 2658-01-002 and the existing site layout is shown on Drawing 2658-01-007.
- 2.1.2 The Site covers an area of approximately 0.45ha and comprises unmanaged grass and scrubland with some self-seeded small trees. A substantial woodland embankment surrounds the majority of the substation complex (especially the northern side where the Site itself is situated) and this provides significant screening to the surrounding landscape.
- 2.1.3 The village of Talwrn is located circa 700m to the south of the Site, while the towns of Rhostyllen and Rhosllannerchrugog are located circa 1.5km to the east and south respectively. Wrexham is circa 4.6km to the north-east.
- 2.1.4 To the immediate south of the Site sits the existing NG substation complex. Further south is the village of Talwrn, separated from the substation complex by Bronwylfa Road.
- 2.1.5 North of the Site is a thick woodland sitting on an embankment which provides complete screening of views to the Site from the landscape beyond. Further north of this woodland embankment lies extensive agricultural land. A solar farm development sits circa 140m north-west of the Site while small pockets of residential development and sporadic agricultural buildings are also present further afield to the north.
- 2.1.6 East of the Site is a continuation of the wooded embankment which surrounds the north end of the NG substation complex. Beyond this lies agricultural fields bounded by hedgerows and tree lines. Bersham Cricket Club lies circa 700m south-east of the Site, although a further strip of woodland adds another layer of screening between the Cricket Club and the Site.
- 2.1.7 The Site is immediately bound to the west by the wooded embankment. A public footpath runs along the opposite side of this section of the embankment. Further west lies agricultural land and small pockets of residential properties.
- 2.1.8 There are no residential dwellings within or immediately adjacent to the Site. The nearest residential properties to the Site are those located off Bronwylfa Road to the south-west, at circa 325m away. Isolated residential receptors are also situated

south-east off Bronwylfa Road at a distance of 390m to the Site. To the north-west and north-east of the Site, further isolated dwellings sit at distances of circa 430m to 540m respectively.

- 2.1.9 The Site is not within an area subject to flood risk. The Site area is below 1 hectare, and therefore Flood Risk Assessment is not a requirement of this application. However, a Surface Water Drainage Assessment has been undertaken for the site (see Appendix F).
- 2.1.10 The Site sits within a Local Wildlife Site ('LWS') and the potential impacts of the Proposed Development on this have been fully addressed within the accompanying Ecological Assessment (Appendix D) and this is summarised in subsequent sections of this Statement.
- 2.1.11 The Site is not subject to any heritage or Conservation Area designations and there are no listed buildings on or in the immediate vicinity to the Site. There are several designated heritage assets located inside a 2km radius to the Site, including a Scheduled Ancient Monument (SAM) located circa 400m east, however, views of the Proposed Development will be blocked by the earthwork embankments of the substation site, as well as the surrounding topography, existing substation buildings and structures, and woodland vegetation.

3.0 PROPOSED DEVELOPMENT

3.1 Introduction

3.1.1 The general arrangement of the Proposed Development is illustrated on Planning Drawings 2658-01-004 and 2658-01-005 and the key components are described in more detail below. The Proposed Development is also illustrated on the following drawings:

- 2658-01-006 Gas Engines Elevations
- 2658-01-008 Site Office
- 2658-01-009 TNO Metering Kiosk
- 2658-01-010 Gas Kiosk Elevations
- 2658-01-011 33KV Transformer Detail
- 2658-01-012 11KV Transformer Detail
- 2658-01-013 Fencing & CCTV Cameras
- 2658-01-014 PRS Kiosk

3.1.2 The key components of the Proposed Development are as follows:

- 11 No. 4.5MWe gas engines within acoustic concrete containers with 12m high exhaust stacks and integrated ventilation;
- Radiators fitted to the top of the gas engine containers;
- Pressure Reducing Station (PRS) Kiosk;
- A Transmission Network Operator (TNO) metering kiosk;
- A Switchgear Room/Control Room;
- A Site Office and Welfare Facilities;
- A 33KV Electrical Transformer & 2.4m high weldmesh fenced compound;
- An 11KV Electrical Transformer & 2.4m high weldmesh fenced compound;
- 2 No. 13,000 litre Lubrication Oil Tanks (clean and waste tanks);
- A Gas Metering Kiosk;
- 5 No. CCTV monitoring points;
- A short access track from NG substation complex; and
- Availability for limited parking on the proposed areas of hardstanding.

3.2 Design Development

3.2.1 The layout of the Proposed Development has been developed to minimise the footprint of the Site. Initial designs included ground mounted radiators that occupied

a larger area and that would have encroached onto the wooded embankments. The Applicant has worked closely with the technology provider to revise the standard design to enable the use of radiators mounted to the top of the containers.

- 3.2.2 The proposed gas engines are capable of utilising natural gas with up to 20% hydrogen without modification. The technology is capable of modification to accommodate increasing hydrogen concentrations as the energy sector moves towards net zero by 2050. Based on the current gas network and emerging hydrogen technology and supply networks consent is being sought for 25-years to ensure that unabated gas generation would not continue beyond 2050. Future consent would be sought for modifications to facilitate 100% hydrogen beyond 2050, if commercially viable and hydrogen networks are in place.
- 3.2.3 The height of the proposed exhaust stacks has been carefully considered to optimise emission dispersal whilst taking maximum advantage of the screening vegetation and landform that surrounds the site.

3.3 Gas Engines

Generating Sets and Enclosures

- 3.3.1 The location of the proposed 11 no. high efficiency gas powered electricity generating sets is shown on Planning Drawings 2658-01-004 and 2658-01-005 while their elevations are shown on Planning Drawing 2658-01-006. Each gas engine would be able to operate independently and in total give a combined potential maximum electrical power output of 49.5MW.
- 3.3.2 Unlike many existing peaking facilities which are powered by diesel and heavy fuel oils the proposed engines would be fuelled by clean burning less polluting mains natural gas and would 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.
- 3.3.3 The gas engines would be low emission and would comply with current emission legislation and Environmental Permitting requirements set out by Natural Resources Wales. In addition, the applicant is investigating powering the gas engines with some mix of natural gas and renewable biomethane through Green Gas Certificates. This is part of the current industry drive to de-carbonise the UK gas supply through the use of biomethane generated from renewable sources and the blending of up to 20%

hydrogen with existing fossil fuel supplies. In addition, research is being undertaken to enable gas engines to operate using higher concentrations of hydrogen as and when commercial networks are available.

- 3.3.4 The gas engines would be contained within a pre-fabricated concrete enclosure unit incorporating air inlets / outlets and connections to the exhaust stack. The concrete enclosure unit is an integral part of the plant and machinery and will provide acoustic enclosure for the engines. The concrete unit would be accessible for general maintenance of the gas engine, but engines would need to be removed for any major maintenance activities and this has been allowed for in the design of the Proposed Development. The typical configuration for an existing peaking plant site is illustrated in Plate 1.



Plate 1: Typical Gas Engine Enclosure with Inlet and Outlet Ventilation and Stacks

Exhaust Stacks

- 3.3.5 The combustion gases from the gas engines would be discharged by a 12m high exhaust stack from each engine. An Air Quality Assessment (AQA) undertaken for the Site deemed this a suitable height for the exhaust stacks to effectively disperse any pollutants at discharge point.

- 3.3.6 The key emissions from the combustion of natural gas are oxides of nitrogen (NO and NO₂) and carbon monoxide (CO). Other pollutants associated with combustion processes such as sulphur dioxide (SO₂) and particulates are negligible due to the type of fuel used. The air quality impacts of the Proposed Development are considered in Section 7.0 and the full AQA can be found under Appendix B.
- 3.3.7 An Environmental Permit would be required to operate the facility and this will ensure that emissions are monitored and will remain below acceptable levels. The Environmental Permitting process is a separate consenting regime to planning and a permit would be obtained prior to operation of the facility. It should be assumed therefore, that the Environmental Permit will control emission limits to acceptable levels.
- 3.3.8 The AQA report provided in Appendix B demonstrates that this is achievable and has influenced the design of the Proposed Development in respect of stack height and operating hours.

3.4 Radiators

- 3.4.1 The proposed gas engines would generate heat from the combustion of natural gas to turn the generator. This heat would be dissipated by a series of external radiators mounted on top of the gas engine containers to reduce the footprint of the facility, as illustrated on Planning Drawing 2658-01-006.
- 3.4.2 The engine cooling system is a closed loop water system, where water is heated up as it passes through the coolers on the gas engines and then passes through the radiators to dissipate excess heat. This process continues for as long as the plant is operating. The radiators would be cooled by integral electric fans that would respond to the ambient temperature, as required, to ensure that the system is maintained at optimum temperatures.
- 3.4.3 Due to the intermittent nature of the gas engine operation in response to system stress events, the Proposed Development is not considered suitable for a heat off-take or district heating network.

3.5 Operational Hours

- 3.5.1 Although the gas engines would be available to supply the National Grid 24hrs/day and 7 days/week. The engines would generally only run for short periods at a time, most typically between the morning and afternoon peak hours between 7am – 11am

and 3:30pm to 7:30pm respectively. It is anticipated that the gas engines could be operational for approximately 2,500 hours per annum and this has been used as the basis for the AQA provided in Appendix B. This would equate to operation for approximately 28.5% of the year.

3.6 Ancillary Infrastructure

- 3.6.1 The Proposed Development would include several ancillary structures to the gas engines which are essential for the operation of the Site. These are discussed in the following sections.
- 3.6.2 Pressure Reducing Station (PRS) KioskThe proposed Pressure Reducing Station (PRS) Kiosk is required to supply gas at the required operating pressure to the Proposed Development, and would be located in proximity to the gas supply point to the north east corner of the National Grid substation complex. The PRS would be c.5.1m wide, 6.3m long and 2.4m high, as shown on drawing 2658-01-014. The PRS would connect to the Gas Kiosk via an underground gas pipe, as illustrated on drawing 2654-01-004 & 005. The gas pipe would be installed via combination of conventional trench construction and directional drilling to minimise effects on existing vegetation.

Switchgear Housing

- 3.6.3 The switchgear equipment would be contained within the switchgear housing located within the centre of the array of gas engine enclosures as illustrated on Planning Drawings 2658-01-004 and 2658-01-006. This housing would comprise a concrete building with doors at either end for access by site operatives / maintenance engineers. The switchgear housing would contain the HV & LV switchgear rooms and communications equipment to control, protect and isolate the on-site electrical equipment from the distribution network.

Site Office

- 3.6.4 The site office would not be permanently manned and is provided for visiting maintenance engineers to provide office and welfare facilities. The office would comprise a portacabin style modular building 2.5m wide by 12.2m long by 3.2m high, as illustrated on Planning Drawing 2658-01-008.

TNO Metering Kiosk

- 3.6.5 The Transmission Network Operator (TNO) metering kiosk would house the TNO switchgear and metering equipment, as well as safety equipment to control, protect and isolate the on-site electrical network from the distribution network. Typical TNO Substation details are provided on Planning Drawing 2658-01-009.
- 3.6.6 Any connections from the TNO metering kiosk outside the Site boundary would be undertaken by an ICP (Independent Connection Provider), in accordance with the TNO design requirements, under Permitted Development Rights. As such, these works do not form part of this application and are not included within the application boundary.

Gas Kiosk

- 3.6.7 A gas reception kiosk would be provided to meter gas use from the mains supply. This would consist of a GRP container and would be finished in dark green. The container would be approximately 2.8m wide by 5.3m long by 2.3m high. Elevations of the proposed gas kiosk are illustrated on Planning Drawing 2658-01-010.
- 3.6.8 The gas metering kiosk would be connected to the local gas distribution network adjacent to the Site by underground pipework. The gas pipeline would connect to a Pressure Reduction Station (PRS) to the east of the site, as shown on Planning Drawing 2658-01-005.

Transformers

- 3.6.9 There would be two transformer compounds provided within the Site boundary of the Proposed Development, as illustrated on Planning Drawing 2658-01-004, and described below.

11kV Transformer

- 3.6.10 The proposed 11kV transformers are required to convert the electricity supplied from the distribution network to a suitable voltage that can be used to power the electrical demands on site (e.g. computer systems, lighting, alarm systems and heating / cooling systems).
- 3.6.11 A typical 11kV transformer is illustrated on Planning Drawing 2658-01-012. The transformer will be surrounded by a 2.4m weldmesh fence to prevent unauthorised access.

33kV Transformer

- 3.6.12 The proposed 33kV transformer is required to convert the electricity generated by the gas engines to a higher voltage for connection to the distribution network and neighbouring Substation. A typical 33kV transformer is illustrated on Planning Drawing 2658-01-011. The transformer will be surrounded by a 2.4m weldmesh fence to prevent unauthorised access.

Lubrication Oil Tanks and Fill Cabinet

- 3.6.13 Two oil lubrication tanks would be situated adjacent and west of the gas engine array. The purpose of the lubrication oil storage tanks would be to provide storage for new and used lubrication oil for the gas engines. These would consist of double skinned fully bunded metal or GRP containers on a fully bunded hard surface with 110% containment capacity. Both the clean and used oil tanks would have a 13,000 litre capacity.

Access, Surfacing & Parking

- 3.6.14 Access to the Site would be via the existing substation complex. An access point and short stretch of track would be created connecting the existing internal route within the substation complex to the Proposed Development site, as shown on Planning Drawing 2658-01-004.. This route connects with the adopted Bronwylfa Road to the south. Construction traffic would also use this route to access the Site. The Substation is not publicly accessible due to health and safety requirement and as such public access to the Proposed Development has not been considered.
- 3.6.15 The surfacing materials used for the Site are shown on Planning Drawing 2658-01-004. The Proposed Development would have an area of hardstanding to the east and directly south of the gas engines to allow maintenance and construction vehicles to operate and manoeuvre around the Site. The gas engine enclosures, transformers, site office, gas kiosk, TNO kiosk and PRS would sit on concrete foundations. All these areas would have a low permeability and have been treated as impermeable in the surface water drainage strategy provided within Appendix F. The remaining areas within the compound would be surfaced with free draining stone to allow infiltration to ground water in accordance with the drainage strategy. Site drainage is addressed below.
- 3.6.16 Allowance for parking is made within the Site compound on the proposed hard surfaced area to the east of the gas engines and adjacent to the office and welfare building. There would typically be a maximum of two vehicles parked on the Site at

any one time during the operation of the Proposed Development and as such, this arrangement is considered to be suitable. All vehicles would be able to enter and leave the Site in a forward gear.

Drainage

Foul Drainage

- 3.6.17 As the Site would not be permanently manned, there is a very limited requirement for foul drainage to serve the welfare facilities, therefore this would be provided by a connection to a septic tank / cesspit tank or chemical toilet.

Surface Water

- 3.6.18 The Site is not currently surfaced. The Proposed Development would introduce areas of impermeable surfacing that could potentially increase surface water run-off rates from the Site. To mitigate this potential effect, a Sustainable Urban Drainage System (SuDS) would be designed as set out in the surface water drainage strategy provided at Appendix F. A review of geological, hydrogeological and soils data indicates that discharging to a watercourse with attenuation and a restricted runoff rate is likely to be most suitable for the Site.
- 3.6.19 However, should infiltration testing prove that this would be the most sustainable option, this would be investigated further to ensure the most sustainable solution is used. The various drainage options would be explored further at the detailed design stage and it is suggested that the final drainage design solution could be approved through a suitably worded condition.

Security and Safety

- 3.6.20 Power generation plants are best located, as in this case, near to electricity substations or overhead lines, and in industrial areas away from residential properties.
- 3.6.21 As the plant will supply the local power grid, electricity is generated at high voltage and safety and security is paramount. There will be no public access onto the Site and the access route via Bronwylfa Road will be securely gated as per the current arrangements to the National Grid substation complex.
- 3.6.22 The Proposed Development would be sited behind a 2.4m high weldmesh security fence with a single controlled vehicle access gate. In addition, the transformers would

be located within their own compound secured by 2.4m high fencing. Appropriate signage to adhere to HSE Welsh regulations would be clearly displayed.

- 3.6.23 An Alarm Receiving Company would be appointed to ensure that no one enters the Site when the facility is not occupied and they will monitor the Site 24/7 and raise any necessary alarms with site management staff or the local police. The security system will include a Closed Circuit TV (CCTV) system, motion sensors, tannoy system and security lights.

Lighting

- 3.6.24 To reduce light pollution and running costs, lighting at the Site would be kept to a minimum and it would only be used when maintenance staff are present on site to allow them to safely move around the Site. Lighting would be low level directional LED lighting with shrouds to prevent upwards light spillage. Lighting would be fitted to CCTV columns, gas engine enclosures, site office and perimeter fencing as required.

Grid Connection

- 3.6.25 The Proposed Development would be connected to the National Grid Substation and Wales and West Utilities gas network via underground cables and pipes respectively.
- 3.6.26 The grid connection works outside the Site boundary would be undertaken by an ICP (Independent Connection Provider), in accordance with the National Grid and Wales and West Utilities design requirements, under Permitted Development Rights. As such, these works do not form part of this application and are not included within the application boundary.

Staff

- 3.6.27 The Proposed Development would not be permanently manned. However, a team of maintenance engineers would visit the Site on routine weekly maintenance visits. The Site would also be constantly monitored by staff remote from the Site throughout the day as per the previously stated security arrangements.
- 3.6.28 The Proposed Development is part of a wider business strategy to develop additional generating and storage facilities elsewhere in the UK and additional staff opportunities would be created for overall management of the business and the trading of energy with the National Grid.

Traffic

- 3.6.29 During site operations, very limited traffic would be generated by the Proposed Development. This would be limited to regular visits by maintenance engineers using a van. There may be occasions where more major maintenance would be required that might require a crane to be brought to the Site. However, this would be an infrequent event. As such the Proposed Development is likely to generate only 1-2 light vehicle movements per week at most.
- 3.6.30 During construction, the maximum number of vehicles accessing the Site during the peak construction phase would be 4 low loaders and approximately 15 light vehicles per day.

4.0 PLANNING HISTORY

4.1 Introduction

- 4.1.1 The Proposed Development would lie entirely within the administrative area (and planning jurisdiction) of Wrexham County Borough Council. The most relevant planning history for the Site is summarised below.

4.2 Planning History

- 4.2.1 A review of the Site's planning application history has been undertaken using WCBC's online mapping search. The review has identified that there is a limited planning history for the Site itself. Those applications considered relevant to the proposed development are summarised in Table 4.1 below:

Table 4.1: Planning History of the Site

Planning Ref.	Description	Outcome / Date
P/2008/0046	Installation of 40 Kva Generator and Ancillary Equipment at Legacy Substation.	Granted, February 2008
P/2014/0263	Installation of Solar Panels and Associated Equipment to Enable Energy Generation and Connection to National Grid.	Granted, July 2014
P/2016/0089	Application for Non-Material Amendment to Planning Permission P/2014/0263 For Retention of Temporary (Internal) Access Track and Alteration to Solar Array Layout as per Condition No 20	Granted, March 2016

4.3 Summary

- 4.3.1 In summary, the local area to the Site has a planning history of applications being granted for energy related developments due to the presence of the existing substation.

5.0 NEED AND BENEFITS

5.1 Introduction

5.1.1 This chapter of the statement considers the strategic need for the Proposed Development based on a review of Government Policy and Strategy.

5.2 National Energy Policy and Strategy

5.2.1 The UK's energy sector is currently experiencing a rapid change in response to efforts to address commitments and policies on tackling climate change. The explicit need to introduce a step change in how the country deals with climate change has been recognised by the UK Government. On 1 May 2019 an Environmental and Climate Change Emergency was declared following the finding of the Inter-Governmental Panel on Climate Change. In order to avoid more than 1.5°C rise in global warming, global emissions would need to fall by around 45 per cent from 2010 levels by 2030, reaching net zero by around 2050.

5.2.2 In June 2019 the UK became the first major economy in the world to pass laws to end its contribution to global warming by 2050. The Climate Change Act 2008 (2050 Target Amendment) Order 2019 sets a legally binding target to bring all greenhouse gas emissions to net zero by 2050, compared with the previous target of at least 80% reduction from 1990 levels.

5.2.3 This will inevitably see an increase in the development in renewable energy generation and this will need to be mirrored by similar increases in balancing services, such as the Proposed Development.

5.2.4 Two-thirds of existing traditional power stations in the UK are reaching the end of their operational lifespan and are anticipated to close by 2030. This fast-changing energy landscape coupled with an increasing reliance on renewable energy generation equates to a system of high grid frequency volatility. The UK is therefore facing a requirement to address its future energy demands and ensure that a system that is fit for purpose is developed.

5.2.5 In response to this requirement, the Government has set out a clear policy framework for the delivery of facilities to meet the UK's future energy demands. This section briefly describes that framework, and subsequently identifies the clear benefits of the

proposed development and its ability to contribute towards meeting the aims of Government energy policy.

- 5.2.6 As set out above the Proposed Development would assist with the transition to net zero by 2050, but would not continue beyond this date due to its use of unabated fossil fuels. Should the gas network be decarbonised by 2050 consent may be sought to extend the life of the development and allow modifications to facilitate hydrogen or other zero carbon gas sources to be used.

National Policy Statements

- 5.2.7 In July 2011, the Department of Energy and Climate Change (DECC) Published the *Overarching National Policy Statement (NPS) for Energy EN-1*.
- 5.2.8 NPS EN-1 sets out national policy for energy infrastructure and “*is likely to be a material consideration in decision making on applications that fall under the Town and Country Planning Act 1990 (as amended)*” (para 1.2.1)
- 5.2.9 With regard to the matter of energy security, Policy Statement EN-1 states that: “*...It is critical that the UK continues to have secure and reliable supplies of energy as we make the transition to a low carbon economy...*” (paragraph 2.2.20) since: “*...energy is vital to economic prosperity and social well-being...*” (Paragraph 2.2.1).
- 5.2.10 Paragraph 3.6.2 of NPS EN-1 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 supply.’
(emphasis added)

- 5.2.11 Paragraph 3.6.3 of NPS EN-1 goes on to state that:

‘Some of the 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. The use of fossil fuels to generate electricity produces atmospheric emissions of carbon dioxide. The amount of carbon dioxide produced depends, amongst other things, on the type of fuel and the design and age of the power station. At present coal typically produces

about twice as much carbon dioxide as gas, per unit of electricity generated’.
(emphasis added)

- 5.2.12 Paragraph 3.6.8 of NPS EN-1 also states that:

‘a number of fossil fuel generating stations will have to close by the end of 2015. Although this capacity may be replaced by new nuclear and renewable generating capacity in due course, it is clear that there must be some fossil fuel generating capacity to provide back-up for when generation from intermittent renewable generating capacity is low and to help with the transition to low carbon electricity generation’. (emphasis added)

- 5.2.13 It is clear from a review of NPS EN-1 that the Government expect new gas generation stations to come forward through the planning system to ensure energy security and to support low carbon electricity generation. As such the Proposed Development is considered consistent with the aims of NPS EN-1.

Planning Our Electric Future: A White Paper for Secure, Affordable and Low Carbon Energy (July 2011)

- 5.2.14 In July 2011, DECC published the White Paper ‘Planning our Electrical Future: A White Paper for Secure, Affordable and Low-Carbon Electricity’ under its Electricity Market Reform agenda. The White Paper set out the Government’s commitment to transform the UKs electricity system to ensure that future electricity supply is secure, low-carbon and affordable. The reforms outlined seek to ensure that, by 2030, the UK will have a flexible, smart and responsive electricity system, powered by a diverse and secure range of low-carbon sources of electricity. The Paper recognises that, in order to ensure continued international competitiveness, a number of unprecedented challenges need to be addressed, namely:

- security of supply is threatened as existing plants close (over the current decade around a quarter (20 GW) of existing generation capacity will be lost as old plant closes);
- decarbonise electricity generation (the need to transform the UK permanently into a low-carbon economy to meet renewable energy targets);
- increased demand for electricity (despite improvements in domestic and non-domestic energy efficiency, overall demand for electricity is likely to double by 2050); and

- electricity price rise (whilst we may experience short-term fluctuation, it is likely that there will be overall increases in wholesale costs, the carbon price and stricter environmental policies, which combined with large investment costs, are likely to lead to higher overall electricity cost).
- 5.2.15 The Proposed Development would help to ensure energy security and would assist in the move to decarbonised energy generation by supporting renewable energy through addressing intermittency of supply from these technologies. The rapid start up ability of the plant will also assist with future electric vehicle charging needs.

Energy Wales: A Low Carbon Transition (March 2012)

- 5.2.16 This Welsh Government documents sets out under 'The Transition to Low Carbon' on page 10 that "[Wales] *will see the widespread deployment of a diverse range of low carbon technologies which will help to generate low carbon electricity, bringing about a steady decarbonisation of energy supply...*"
- 5.2.17 The document also states that "Gas will be a key transitional fuel because greenhouse gas emissions from gas are significantly less than coal subject to the method of extraction. Gas is a flexible, responsive and reliable source of energy which can play a key role in the transition to a genuinely low carbon energy system." (emphasis added).

Energy Security Strategy (November 2012)

- 5.2.18 Paragraph 4.7 of the Energy Security Strategy states that:

'To date, we have largely relied on competitive markets to deliver a diverse electricity mix. The nature of electricity and the fact that it cannot be stored cheaply means that we need a mix of baseload plants which run all year round and at all times of the day, combined with more flexible plants that can operate on a "mid-merit" or "peaking" basis as needed. Different technologies suit these different purposes and the market price signal has provided the incentives for these different technologies to come forward' (emphasis added).

- 5.2.19 Paragraphs 4.16 and 4.17 go on to state that:

'gas currently forms an integral part of the UK's generation mix. For instance, in 2011 combined cycle gas turbines (CCGTs) generated around 40 per cent of our electricity.'

Gas plants are quick to build, have relatively low capital costs, emit around half the carbon of coal power stations, and are a reliable and flexible source of electricity.

The Government expects that gas will continue to play a major role in our electricity mix over the coming decades, alongside low-carbon technologies as we decarbonise our electricity system. The role gas plays will be determined by the market, whilst keeping emissions within the limits set out in the carbon budgets. Unabated gas will continue to play a crucial role in our generation mix for many years to come and the amount of gas capacity we will need to call on at times of peak demand will remain high. In the long term, the development of cost competitive CCS should ensure gas (and coal) can continue to play a full role in a decarbonised electricity sector.'

(emphasis added)

- 5.2.20 The Proposed Development would utilise clean burning gas engines to provide energy security and flexibility to the National Grid and would be less polluting than coal, diesel or other forms of fossil fuel generation.

Energy Act 2013 (December 2013)

- 5.2.21 The Energy Act 2013 focuses on new incentives for low-carbon and secure electricity generation, needed to achieve the UK's carbon emissions caps to 2020 and 2025 under carbon budgets.
- 5.2.22 The Energy Act expresses the Government view that the UK is at a critical juncture in the way it generates electricity (both for domestic and non-domestic use). Around a fifth of the capacity (available at 2011) is set to close over this decade, at a time when demand for electricity is expected to double from its current level by 2050. Set against this, the Government considers it is imperative that the right mechanisms are in place to attract the £110 billion investment needed to ensure that the UK can meet its requirements for secure flexible supplies at affordable prices.
- 5.2.23 The Proposed Development represents a significant financial investment and would contribute to meeting the investment requirements and energy security needs set out in the Energy Act.

Maintaining UK Energy Security (May 2015)

- 5.2.24 In May 2015, the UK Government updated its policy on Maintaining Energy Security. Central to UK energy security is the UK Government's policy in respect of Electricity

Market Reform ('EMR'). EMR is designed to deliver the Government's core objectives of:

- Security of Supply;
- Climate Change, and
- Affordability.

- 5.2.25 The EMR sets out two mechanisms for incentivising investment in the nation's energy infrastructure, namely:
- Contracts for Difference ('CfD'), which provides long term price stabilisation, allowing investment to come forward at a lower capital cost, and
 - Capacity Agreements (within a Capacity Market ('CM')), which provides payments for reliable capacity to be available when needed, helping to ensure security of supply.
- 5.2.26 Capacity Agreements enhance energy security by ensuring that sufficient reliable capacity is in place to meet the demand required from the National Grid. In return for capacity payments, facilities such as the Proposed Development, must be able to deliver the necessary energy when requested, or face financial penalties.
- 5.2.27 The cost of this Capacity Market is kept to a minimum by an auction process which sets the level of capacity payments for specified periods and technologies.
- 5.2.28 The Proposed Development would be capable of serving the Capacity Market and would provide the type of significant capital investment that the Government envisaged would come forward through the mechanisms promoted through EMR.

Renewable Energy Assessment (September 2019)

- 5.2.29 Under paragraph 1.1 of this Assessment, it is stated that "*Climate change and energy security are key priorities of both the UK and Welsh Governments...The generation and use of renewable and low carbon energy sources has a key role to play in this... [The] Welsh Government has made a commitment to tackling climate change, resolving that all will play the fullest possible part in meeting statutory UK and EU targets on greenhouse gas emission reduction.*"
- 5.2.30 The Assessment also states that "*Local Authorities have several key roles to play that can facilitate the use and generation of renewable and low carbon energy.*"

Prosperity for All: Low Carbon Wales (2019)

- 5.2.31 This document sets out actions that will be taken by the Welsh Government to cut emissions and support the growth of a low carbon economy, in light of the recent decarbonisation agenda.
- 5.2.32 Under Part 3 ‘Sector Emission Pathways: Power’ (page 65), the ‘ambition’ of the Welsh Government is set out: “*We need low carbon electricity to become the main source of energy in Wales. Renewable electricity will be used to provide both heating and transport in addition to power. Gas will also have an important transitional role in power generation.*” (emphasis added).
- 5.2.33 It continues by addressing the key issue with reliance on renewable energy: “*Renewable generation will continue to increase to meet a large portion of power in a decarbonised system. However, the intermittent nature of renewables means they alone cannot currently meet an electricity demand that varies considerably by time of day and season and will increase with the penetration of electric vehicles and electric heating... The system will need to integrate renewable generation with storage and other flexibility services, in order to minimise the need for new generation and system reinforcement to serve large peak demands.*” (emphasis added).
- 5.2.34 It is clear from this recent publication that the Welsh Government acknowledges gas as an important transitional energy generation in Wales and the necessity for flexible generation facilities (such as that which the Proposed Development would provide) to support current and future renewable generation schemes.

National Grid Predicted Future Requirements

- 5.2.35 NG publishes a suite of documents on the future of energy in the UK annually. Those considered to be of most relevance to the Proposed Development are the Future Energy Scenarios and System Operability Framework documents, both of which are considered in turn below.

Future Energy Scenarios

- 5.2.36 The latest version of the ‘Future Energy Scenarios’ (FES) document was published in July 2020 and provides further updates on the previous version following the UK and Welsh Governments commitment to net-zero greenhouse gas emissions by 2050. It identifies that increasing demand, the decarbonising agenda and new

technology is driving significant changes in the energy supply market. The FES states in its key messages that:

- *Reaching net zero carbon emissions by 2050 is achievable. However, this requires immediate action across all key technologies and policy areas, and full engagement across society and end consumers.*
- *Hydrogen and carbon capture and storage must be deployed for net zero. Industrial scale demonstration projects need to be operational this decade.*
- *The economics of energy supply and demand fundamentally shift in a net zero world. Markets must evolve to provide incentives for investment in flexibility and zero carbon generation.*

5.2.37 The FES states that “*The net zero target makes it more important than ever to consider all aspects of the energy system. This includes how different energy sources combine to provide negative emissions and whole system flexibility*” (emphasis added).

5.2.38 The need for Energy Flexibility is discussed within the FES, where it is stated that: “*Energy systems need to continuously match supply to demand [i.e. energy balancing]. Energy system flexibility is the ability to adjust supply and demand to achieve that balance. It also allows us to keep the flows of energy through the networks within safe limits... To meet net zero carbon emissions, system flexibility will become more important in all areas as society reduces reliance on fossil fuels which can be stored and increases reliance on weather-driven energy sources.*” (emphasis added).

5.2.39 The FES goes on to set out the following key insights into respect of Energy Flexibility:

- ‘Accommodating high levels of renewable generation and electrification requires a significant increase in flexibility over short and medium timescales from minutes to weeks.’
- *The high societal change scenarios of Leading the Way and Consumer Transformation have the highest levels of consumer engagement in flexibility with high levels of demand side response, domestic storage and vehicle-to-grid.*
- *Frequent oversupply of electricity generation will require an increase in flexible demand to avoid generation being curtailed.’*

- 5.2.40 Furthermore, on the subject of energy flexibility, the FES states that: “*Between 2030 and 2040 as renewable generation dominates, further flexibility is needed to balance a net-negative carbon emission electricity system in the net zero scenarios.*”
- 5.2.41 With regard to renewable energy, the FES sets out that: “*Renewed government support for some renewable technologies has driven our expectation of higher growth in renewable generation to a level which will be necessary to meet net zero. The more established technologies of solar and wind dominate compared to smaller contributions from other technologies.*”
- 5.2.42 The Proposed Development would deliver flexible generation that would enable the deployment of increased renewable energy generation. The life of the Proposed Development would be limited to 25-years so that unabated gas generation would not continue beyond 2050. As such, the Proposed Development would be a transitional facility over the short to medium term and would be decommissioned by 2050, unless the gas network has been decarbonised and additional consent secured.

System Operability Framework

- 5.2.43 The System Operability Framework (SOF) takes a holistic view of the changing energy landscape to assess the future operational requirements of the electricity network. It combines insight from the FES report with a programme of technical assessments to identify medium and long term requirements for operability.
- 5.2.44 The Operability Strategy Report 2020 outlines the future challenges and actions in maintaining an operable electricity system. It sets out what needs to be done to reach NG's zero carbon 2025 ambition and highlights how stakeholders can engage to assist in the achievement of these challenges.
- 5.2.45 The Report states that; “*By 2025, we will have transformed the operation of Great Britain's electricity system and put in place innovative systems, products and services to ensure that the network is ready to handle zero carbon energy. This means a fundamental change in how our system is operated – integrating newer technologies right across the system – from large scale off-shore wind to domestic scale solar panels and increased demand side participation.*” To support the integration of these renewable technologies, balancing services will be a key component of future operating systems in the short to medium term until commercial

scale hydrogen production/transmission systems and carbon capture and storage technologies are commercially viable.

5.3 Summary

- 5.3.1 It can be seen from the above review that the UK and Welsh policy message on energy security is strong and unambiguous. There is a clear need to ensure security of supply through the development of a diverse energy generation system to support the increased deployment of renewable energy, increased peak demands and move to electric vehicles.
- 5.3.2 Flexible generation continues to be considered a key component of the future energy mix under all scenarios considered in the FES.
- 5.3.3 The Proposed Development would provide the type of significant capital investment that the UK Government envisaged would come forward through the mechanisms promoted through EMR. It would provide a flexible modular energy supply which could almost instantly deliver 4.5-49.5WMe of power to respond to the demands of the National Grid. In addition, the technology is able to accommodate increasing concentrations of hydrogen in the gas networks and could be capable of utilising 100% hydrogen with modification at some point in the future.

6.0 NOISE ASSESSMENT

- 6.1.1 To assess the potential noise levels at the nearest sensitive receptors, NVC were commissioned to undertake a noise impact assessment and to advise (where appropriate) on any additional noise mitigation measures to meet planning guidance and noise standards. The Noise Impact Assessment is contained within Appendix A.
- 6.1.2 The results of baseline noise monitoring over a weekend monitoring period at three locations (in areas providing a representative assessment of background sound level) in the vicinity of sensitive receptors indicated that representative background sound levels between 0700-2300 hours at the monitoring position were shown to vary between 42dB and 50dB LA90. During night-time periods the background levels were established as 35dB to 42dB LA90.
- 6.1.3 Typical site operating noise levels have been established from empirical library data of typical acoustically treated gas generator sets and ancillary plant to provide input data for the noise model.
- 6.1.4 In order to achieve reasonable and appropriate noise contribution levels at the nearest receptors to the Site, the following examples of noise mitigation measures were set out in the Noise Assessment, although it was noted that there was more than one design that could achieve the design limits:
- (i) The generator sets would need to be housed within an acoustic enclosure that provides a reduction in noise level for each unit not to exceed a design level of 60dB(A) @ 1m at maximum load.
 - (ii) Generator set exhaust systems would also be designed to a level not exceeding 75dB(A) @ 1m at maximum load.
 - (iii) Radiators to be designed not to exceed 75dB(A) @ 1m at maximum load.
 - (iv) The Gas Kiosk & DNO Kiosk enclosure designed to a level not exceeding 65dB(A) @ 1m at maximum load.
 - (v) The Transformers designed to a level not exceeding 65dB(A) @ 1m at maximum load.
 - (vi) Coolers for the switchgear room or any other cooling system noise levels 75dB(A) @ 1m.
- 6.1.5 The predicted noise contribution from the application site using ISO9613-2 methodology and CadnaA noise modelling software with assumed noise mitigation

measures show rating noise levels from Site to range between 30dB and 39dB LAeq during maximum site operations.

- 6.1.6 The BS4142 assessment showed that with appropriate mitigation, the Proposed Development can be designed to comply with relevant noise guidance and standards. The impact at other receptor positions would be lower than that predicted for the chosen receptors.
- 6.1.7 In terms of absolute levels, the predicted highest noise contributions from the proposed site operations were shown to be well below residual sound levels and therefore in context noise levels would not be significant.
- 6.1.8 Absolute levels are below WHO guidelines for general daytime amenity levels, night-time levels for sleep disturbance and internal room design criteria according to BS8233: 2014 assuming windows open.
- 6.1.9 The predicted residual noise levels from the Site have been calculated based on an example of noise mitigation measures designed to achieve a specific design level. This design limit would form part of the purchasing specification when the generator supplier is defined.
- 6.1.10 Noise from construction activities would not be significant and best practice would be applied according to BS5228-1:2009+A1:2014 to minimise noise.
- 6.1.11 The Noise Assessment concluded that the Proposed Development can be designed to operate such that it complies with all appropriate and relevant noise standards and guidance.
- 6.1.12 Further to the Noise Assessment, a Noise Assessment Addendum was also produced and is attached to the end of Noise Impact Assessment in Appendix A. This addendum assessed the impact of noise generated by the proposals on the tranquillity of the Clwydian Range and Dee Valley Area of Outstanding Natural Beauty (AONB). Tranquillity was noted by Natural Resources Wales (in their comments on the EIA Screening) as being a special quality of the AONB, and clarity on the impact of this was requested.
- 6.1.13 The addendum assessment found that predicted noise levels were shown to be 29.8dB LAeq at the AONB boundary, which were not considered significant in terms of having any effect on tranquillity. See addendum within Appendix A for the reasoning behind this.

7.0 AIR QUALITY

- 7.1.1 Smith Grant LLP ('SGP') were commissioned to undertake an Air Quality Assessment ('AQA') for the Proposed Development. The Air Quality Assessment report is provided at Appendix B and the findings are summarised below.
- 7.1.2 Primary aerial emissions from the gas engines will be NOx / NO₂ and CO. The air quality assessment has assessed potential impacts of aerial emissions from the stacks associated with the Proposed Development on local human and ecological receptors.
- 7.1.3 The facility will be operated in accordance with an Environmental Permit issued by Natural Resources Wales. This permit will include controls on permitted emission limits from the gas engine stacks. Stack characteristics, emission concentrations and emissions rates for the plant have been based on data provided by a technology provider being considered for the Proposed Development and are based on a potential gas engine that may be employed at the site. The assessment has been based on a NOx emission concentration of 250 mg/m³ (at 5% O₂) as required under Environmental Permitting requirements.
- 7.1.4 For the purposes of the assessment, the model was initially run for a full-time 8,760 hours per annum operation. The subsequent long-term assessment has considered a reduced operation of up to 2,500 hours per annum. The resulting process contributions and total pollutant concentrations have been compared to relevant long-term and short-term Air Quality Assessment Levels ('AQALs') in accordance with appropriate guidance.
- 7.1.5 Greatest impacts are predicted at those residential receptors closest to the site to the northeast, southwest and southeast. Background pollutant concentrations at these locations are expected to be well below the AQALs, and the assessment does not predict the proposed development would result in total long-term NO₂ concentrations here to approach, or exceed, the relevant AQALs. Impacts are predicted to be *slight* at most; this is experienced at a single receptor with all other impacts being predicted to be *negligible*.
- 7.1.6 Predicted short-term total concentrations at the nearest residential receptors are predicted to remain well below the AQAL.

- 7.1.7 The assessment has also included consideration of the nearby footpaths although any public exposure here would be transient and the AQALs do not specifically apply. All predicted total concentrations remain well below the AQALs.
- 7.1.8 The assessment of ecological impacts has comprised a Critical level and Critical Load assessment, where relevant Critical Load information is available. It is concluded that the Proposed Development would not result in likely significant effects at any of the international designated sites.
- 7.1.9 Predicted long-term ambient NOx, nitrogen deposition and acid deposition PCs at the Legacy Sub-station LWS are all below the relevant screening thresholds. The short-term ambient NOx PCs and PECs are above the screening thresholds at parts of the LWS nearest to the site and as such the Proposed Development could result in pollutants impacting the LWS. However, as the operation would only be for *up to* 2,500 hours per annum, with the actual operations unlikely to be over a full 24-hour period in any one day, then the maximum daily mean would be expected to be considerably less than that modelled. Furthermore, the long-term effects on vegetation of ambient NOx are thought to be more significant than the short-term effects. Exceedance of the screening threshold does not therefore infer that significant pollution would occur. Further details with regard to impacts of the Proposed Development on site ecology and the LWS are addressed under Section 9.0 and Appendix D of this Statement.
- 7.1.10 In response to Natural Resources Wales comments on the EIA Screening Opinion (see Appendix H), further AQ assessment work has been undertaken of the potential impacts of the Proposed Development on identified European nature conservation sites within 10km of the Site in-combination with other identified relevant built and committed proposals within 10km of the Site. This has also incorporated consideration of a proposed gas-fired electricity generating facility on Oak Road, Wrexham Industrial Estate, located about 9.2km to the east north-east. The further assessment concluded that, when considered in combination with these delivered, committed and proposed developments, the Proposed Development would not likely result in significant effects at any of the international designated sites.
- 7.1.11 In conclusion, the AQA demonstrates that the aerial emissions produced by the Proposed Development would: a. accord with appropriate guidance, b. have negligible impact on residential receptors, c. not have significant long term impacts

on the LWS, and d. not result in significant cumulative effects at any internationally designated sites.

8.0 LANDSCAPE AND VISUAL EFFECTS

- 8.1.1 This application is supported by a Landscape and Visual Appraisal (LVIA), provided at Appendix C. The LVIA seeks to provide a clear understanding of the Site and its context, identify how the proposal would relate to existing landscape and views, and identify any likely significant landscape and visual effects.
- 8.1.2 The LVIA concluded that the Proposed Development would be modest both in extent and in height, being largely contained within an existing plot defined by the planted earthworks at the perimeter of the Legacy Substation. The proposed new structures would be barely visible outside of the substation curtilage due to these planted earthworks and would have no appreciable influence upon the wider landscape or views across it.
- 8.1.3 The LVIA concludes that the landscape and visual effects of the Proposed Development would not be significant and no mitigation measures are required.

Heritage Features

- 8.1.4 As discussed previously in this Statement, there are several designated heritage assets within 2km of the Site. However, as identified in the LVIA, views of the Proposed Development will be heavily screened by the planted embankments surrounding the substation. In addition to this, the topography of the surrounding landscape, existing buildings of the substation, and existing vegetation in the wider landscape would further screen views of the Site to these heritage assets.
- 8.1.5 In the EIA Screening Opinion consultation (see Appendix H), Cadw, the Welsh Governments historic environmental service, assessed the characteristics of the Proposed Development and its location within the historic environment, particularly the its likely impact on designated or registered historic assets of national importance. Cadw highlighted the presence of the aforementioned designated heritage assets within 2km of the Site but stated that; *“most views of the development will be blocked by the earthworks of the Substation, topography, buildings and existing vegetation. In winter it may be possible to see the top of exhaust stacks from scheduled monument DE137 Offa's Dyke: Pentre-Bychan Hall Section, extending 540m S from Bron-Wylfa, but they will still be heavily screened by the trees. It is therefore [Cadw's] opinion that the Proposed Development is unlikely to have a significant impact on the settings of any designated heritage assets.”*

9.0 ECOLOGY AND NATURE CONSERVATION

- 9.1.1 Avian Ecology were commissioned to undertake an ecological assessment of the Site and its immediate surroundings in the context of the Proposed Development. The site survey and assessment were undertaken on 30th September 2019 by a qualified and experienced ecologist, with a subsequent visit undertaken in May 2020. The findings of the ecological assessment are provided in an Ecological Assessment Report in Appendix D and this accords with national best practice guidelines in: *Chartered Institute of Ecology and Environmental Management (2017) Guidelines for Preliminary Ecological Appraisal. Second Edition. CIEEM, Hampshire.* The findings and conclusions are summarised below.
- 9.1.2 The Site sits within the Legacy Substation Local Wildlife Site (LWS) which is a non-statutory designated site. The LWS is designated for its range of habitats and constituent species rather than for a single feature.
- 9.1.3 Whilst the layout of the Proposed Development has been designed to minimise land take within the LWS, this land will be directly impacted by the proposals and an area of habitat would be lost (comprising species-rich grassland, semi-improved grassland of lower diversity and a small area of scrub).
- 9.1.4 To compensate for the loss of LWS land and to mitigate for any effects on associated species, a series of mitigation and enhancement measures will be implemented. These are to be set out within a Biodiversity Management Plan and agreed with the Council Ecologist. Such measures will include:
- Selective translocation of species-rich grassland turves from within the construction footprint to prepared receptor areas within the LWS. Turf from the construction footprint, particularly the areas containing orchids, would be carefully lifted and translocated, for example to reinstate ground temporarily affected during construction of the pipe route to the east of the gas peaking plant.
 - Selective scrub management to encourage the spread of species-rich grassland and protect existing grassland currently being overgrown by scrub. Grassland extends up the steep slope adjacent to the Site and remains reasonably diverse, although not to the extent of the grassland within the proposed development footprint. This grassland is however gradually being lost due to considerable scrub encroachment. Scrub control to maintain open areas of grassland would improve the diversity of this grassland, which could then be maintained through ongoing management.

- Invasive species control and eradication plan across the LWS.
- Implementation of a Habitat Management Plan to ensure the successful establishment of the translocated grassland and subsequent grassland management regime to encourage a diverse sward to be maintained.
- Provision of an additional barn owl box and 5 further bird boxes and 6 bat boxes, to be suitably positioned on trees under the advice of an ecologist.
- Three insect hotels/refugia (for range of species from solitary bees to ground dwelling species);
- Three hedgehog refuge/hibernation boxes; and,
- New bee hives (subject to beekeeper management and ongoing judgement on local foraging capacity to ensure wild pollinators are not out-competed by additional hives)

- 9.1.5 The Ecological Assessment identified the presence of great crested newts ('GCN') within a pond near to the development site, and in response to the potential impacts the Proposed Development may have on GCN and their habitat, a GCN Mitigation Strategy has been produced. This Strategy sets out measures for habitat creation and enhancement of the LWS for GCN (see Appendix 3 of the Ecological Assessment). The GCN habitat creation and enhancement measures are proposed within the National Grid land ownership and with the agreement of National Grid. The Strategy will guarantee the long-term security of GCN habitat provisions.
- 9.1.6 Woodland situated on the embankments to the north, east and west will not be significantly affected by the proposal, with only minor areas of vegetation removal required, affecting self-sown semi-mature and young trees. All retained trees within the vicinity of construction areas will be protected during construction works in-line with BS 5837:2012 *Trees in relation to design, demolition and construction*.
- 9.1.7 Bare ground and ephemeral/short perennial habitats within the survey area were of low value to wildlife, supporting little structural or species diversity. The temporary loss of areas of such habitat during construction are considered negligible in the context of likely value to wildlife and botanical value.
- 9.1.8 The trees on or bordering the Site were considered to offer negligible bat roost potential due to their age and lack of features such as cracks, rot holes etc. No further surveys were considered to be required in relation to roosting bats and the proposed development will not affect any potential roost locations. As the woodland, scrub, pond and majority of grassland within the Substation curtilage will be retained and no

loss of connectivity with suitable habitats in the wider area will be felt, bats will continue to be able to use the Legacy Substation LWS for foraging and commuting purposes.

- 9.1.9 Subject to the recommendations set out in Table 5.1 of the Ecological Assessment Report in Appendix D and the GCN Mitigation Strategy, other potential ecological effects of the Proposed Development can be effectively managed. As such, the Proposed Development would not result in unacceptable ecological impacts on protected habitats or species, if recommendations are followed.

10.0 GROUND CONTAMINATION AND INSTABILITY

- 10.1.1 Smith Grant Environmental Consultancy LLP ('SGP') were commissioned to undertake a Stage 1 Assessment (Desk Study) to determine any potential constraints with regard to ground conditions and contamination that may impact the Proposed Development. This Assessment is contained within Appendix E. The findings and conclusions are summarised below.
- 10.1.2 SGP consulted WCBC's Local Authority Contaminated Land Officer regarding the Site and any information they may have with regards to contamination. The Officer confirmed that WCBC had no "*no specific concerns in relation to contamination issues, with respect to the proposed development, and should a planning application be received we would not recommend that any contamination conditions be placed on any future planning permission that may be granted*".
- 10.1.3 The Site is not located within a Development High Risk Area and the Coal Authority has not identified it as located within an area of past shallow coal mine workings or probable shallow coal mine workings. The report considered that a Coal Mining Risk Assessment was not required for the Site.
- 10.1.4 No sources of on-site contamination have been identified which could pose a risk to human health, the environment or pose a significant constraint to the proposed development of the Site.
- 10.1.5 No landfills have been identified within 500m of the site. The Coal Authority have confirmed the absence of underlying coal measures, recorded past mining and no probable unrecorded shallow mine workings; no mine entries are present within 100m of the site boundary.
- 10.1.6 The Site is located within an area where 3-5% of homes lie above the Radon Action Level; basic radon protection measures are required in new buildings or extension/ However, it is noted that the welfare office on the Site is not a permanently manned structure, and therefore these radon protection measures are not required for any element of the Proposed Development.
- 10.1.7 The proposed use of the Site for a gas peaking plant facility is considered to be of low sensitivity in regard to potential contaminants. The operational area of the Site will be covered by hardstanding or stone surfacing in its entirety, while the gas pipeline will be underground. Considering the Proposed Development, the history of

the Site and the absence of significant contaminants, the risks to human health is very low / negligible.

- 10.1.8 The report recommends that a geotechnical investigation is carried out to confirm the shallow ground conditions and bearing capacity of the underlying stratum to inform the design of the development. It is considered that these further investigative works are only required to inform the engineering design.
- 10.1.9 In conclusion the report found that there were no particular constraints to the Proposed Development with regards to ground contamination and concluded that the Site is suitable for the proposed use with regards to ground contamination and no further investigations or assessment with regard to contaminated land were considered necessary.

11.0 SURFACE WATER DRAINAGE

- 11.1.1 KRS were commissioned to undertake a Surface Water Drainage Assessment for the Proposed Development. The purpose of this report is to assess the potential for disposing of surface water. The report is provided at Appendix F, and a summary of the findings is provided below.
- 11.1.2 The ground conditions suggest infiltration would provide inception storage, but disposal of significant volumes of runoff may not be appropriate. At this stage, it is proposed that the surface water runoff from the Site can be discharged partially via infiltration SuDS methods.
- 11.1.3 Should infiltration be found to be unsuitable, the next option is discharge to a surface waterbody. There is a drainage ditch to the north east of the site. If the potential of discharge to a surface water body is required, then discharge to this drainage ditch should be investigated further.
- 11.1.4 There are no public sewers located within the vicinity of the Site therefore, it would not be possible to discharge to the public sewers.
- 11.1.5 The most suitable and likely scenario would be discharging to the ditch with attenuation and a restricted runoff rate. The SuDS Strategy takes into account the following principles:
- No increase in the volume or runoff rate of surface water runoff from the Site.
 - No increase in flooding to people or property off-site as a result of the Proposed Development.
 - No surface water flooding of the Site.
 - A 30% increase in rainfall intensity due to climate change during the lifetime of the development.
 - A 10% increase in impermeable areas due to urban creep.
 - Maintain / improve surface water quality.
 - Provide amenity and biodiversity benefits.
- 11.1.6 The proposed SuDS Strategy will take the form of:
- Permeable surfaces - crushed permeable stone and grass.
 - Surface water attenuation storage in the form of an infiltration trench along the perimeter of the site.

- If required - surface water attenuation storage in the form of underground storage /oversized pipes. Runoff rates would be restricted to 2.00l/s to the watercourse.
- 11.1.7 For the purposes of the Surface Water Drainage Assessment the most likely scenario, of discharging to the ground has been considered. However, should infiltration testing prove that this would not be a viable option the option of discharge to the drainage ditch would be investigated further to ensure the most sustainable solution is used. The various drainage options would be explored further at the detailed design stage and it is suggested that these detailed drainage proposals could be secured through a suitably worded planning condition.
- 11.1.8 The Surface Water Drainage Assessment demonstrates that the Proposed Development would be operated with minimal risk from flooding, would not increase flood risk elsewhere and is compliant with the requirements of the SuDS Standards. The Proposed Development will considerably reduce the flood risk posed to the Site and to off-Site locations due to the adoption of a SuDS Strategy.
- 11.1.9 The Surface Water Drainage Assessment concluded that the Proposed Development should not therefore be precluded on the grounds of flood risk or drainage.

12.0 ARBORICULTURE

- 12.1.1 An Arboricultural survey to BS5837 of all trees within impacting distance of the Site was undertaken by Arbtech Consulting on 1st June 2020. The Arboricultural Method Statement, Tree Protection Plan, Arboricultural Impact Assessment, Tree Protection Plan and Tree Survey Report are contained within Appendix G to this report.
- 12.1.2 A total of 8 No. individual trees and 10 No. groups of trees were surveyed. Details for each of the trees surveyed are provided in the Schedule of Trees. The proposal requires the removal of three individual category C trees and three category C groups of trees/shrubs. All tree work is to be undertaken in accordance with British Standard BS 3998:2010 *Recommendations for tree work*.
- 12.1.3 Protective measures are to be installed immediately following the completion of the tree works, and are to be sited and aligned in accordance with the tree protection plan (Arbtech TPP 01) prior to the commencement of any works or the introduction of any machinery or material to site.
- 12.1.4 The Arboricultural Report concluded that the overall quality and longevity of the amenity contribution provided for by the trees and groups of trees within and adjacent to the Site would not be adversely affected as a result of the Proposed Development. It was considered that tree protection measures could be dealt with by planning conditions.

13.0 PLANNING POLICY CONTEXT AND APPRAISAL

13.1 Introduction

- 13.1.1 This section undertakes an appraisal of the Proposed Development in the context of the current and the emerging planning policy framework.

Local Development Plan

- 13.1.2 Section 38(6) of the Planning and Compulsory Purchase Act 2004 (PCPA) requires applications to be determined in accordance with the Development Plan unless material considerations indicate otherwise. At the time of drafting, the adopted Development Plan, relevant to the Proposed Development comprises:

- Wrexham Unitary Development Plan, adopted February 2005.

Material Considerations

- 13.1.3 There is no strict definition of what constitutes a 'material consideration' in planning legislation, although case law indicates that any consideration, which relates to the use or development of land is capable of being a material consideration in the determination of a planning application.
- 13.1.4 Such considerations can include Planning Policy Wales ('PPW'), emerging planning policies, government policy & strategy and Supplementary Planning Documents ('SPDs').
- 13.1.5 The Wrexham Local Development Plan ('LDP') will replace the current Unitary Development Plan once adopted and will be used as a basis for making land use planning decisions up until 2028. The latest version of the LDP available is a working version of the Deposit Plan produced in April 2019 which currently under examination. While the LDP is not yet adopted, it is still a material consideration for this application and therefore the relevant policies have been addressed.

13.2 Planning Policy Appraisal

- 13.2.1 The following appraisal considers the polices and guidance which are considered directly material to the determination of the proposal for which planning permission is being sought.

The Statutory Development Plan

- 13.2.2 All relevant key policies contained within the Statutory Development Plan are considered below.

Wrexham Unitary Development Plan (2005)

- 13.2.3 The Wrexham Unitary Development Plan ('UDP') was adopted in February 2005 and covers the administrative area of the Wrexham County Borough Council. It provides a framework for local decision making.

Strategic Policies of the UDP

- 13.2.4 Part 1 of the UDP sets out the 'Strategic Policies' for the Borough. Those strategic policies of key relevance to the Proposed Development are the location of developments and renewable energy. Each of the relevant strategic policies are discussed below:

Policy PS2

- 13.2.5 Strategic Policy PS2 requires that "*Development must not materially detrimentally affect countryside, landscape/townscape character, open space, or the quality of the natural environment*". The LVIA (see Appendix C and Section 8.0 of this statement) concluded that the Proposed Development would have no significant visual impacts on the landscape due to the existing planted earthworks.
- 13.2.6 The Ecological Assessment (see Appendix D and Section 9.0 of this statement) found that, whilst there would be some direct impacts of the Proposed Development on the natural environment, appropriate mitigation measures could be implemented to make the proposals acceptable.
- 13.2.7 In light of the above, the Proposed Development is considered to conform to this policy.

Policy PS3

- 13.2.8 This strategic policy aims to direct new development towards previously developed land (brownfield land). However, most brownfield sites (which are typically within or adjacent to built-up areas) are unsuitable for gas peaking plant development (e.g. being in close proximity to sensitive receptors). Gas peaking plants also require

location near to gas and grid connections, and therefore their location is largely dependent on existing infrastructure.

- 13.2.9 Furthermore, and as previously discussed within the Statement, the site selection process for the Proposed Development has been assessed as part of a nation-wide study of potential sites. The Site at the Legacy substation was deemed one of the most suitable locations to establish a gas peaking plant.

Policy PS4

- 13.2.10 Policy PS4 requires that “*Development should maintain the existing settlement pattern and character and be integrated with the existing transport network...*”

- 13.2.11 As discussed under Policy PS3, the Proposed Development has locational requirements and the proposal site is therefore situated outside of the local settlement boundary for these reasons.

Policy PS11

- 13.2.12 This policy seeks that development proposals improve biodiversity and protect sites of local nature conservation. The Proposed Development sits on land within the Legacy Substation LWS as previously addressed under section 9.0 of this Statement and the Ecological Assessment under Appendix D. Appropriate measures to address the potential effects of Proposed Development on the LWS have been discussed with WCBC and mitigation measures have been fully incorporated in the recommendations for the Site. As such, the Proposed Development is considered to comply with this policy.

Policy PS12

- 13.2.13 Strategic Policy PS12 sets out WCBC’s strategy for renewable energy within the Borough. The policy states that “*Proposals for the generation of energy from renewable sources will be supported provided that the wider environmental benefits are not outweighed by any detrimental impacts of the proposed development (including any electricity transmission facilities needed) on the landscape, public safety, and the local environment.*”

- 13.2.14 The Proposed Development will support the deployment of renewable energy generation opportunities in the local area through the balancing services that it would provide during times when additional electricity generation is needed to maintain a

stable network. The benefits and need for such balancing services have previously been addressed under Section 5.0 of this Planning Statement. The proposal is therefore considered to support the principles of this strategic policy.

Other Policies of the UDP

13.2.15 Part 2 of the UDP covers ‘Specific Policies’ of the plan. Those relevant to the Proposed Development are set out and appraised as follows.

Policy GDP1

13.2.16 GDP1 sets out several criteria for which all new development should follow. Each criteria are set out below and discussed in context of the Proposed Development:

a) Ensure that built development in its scale, design and layout, and in its use of materials and landscaping, accords with the character of the site and makes a positive contribution to the appearance of the nearby locality.

13.2.17 The Proposed Development has been designed to reduce its footprint on the Site whilst maximising its operational ability. The proposals would sit alongside the existing NG substation to the south, which is considered a significantly sized infrastructure development in the local area. This existing development has established a precedent of industrial character and appearance in the locality. The Site is also heavily screened by a thickly wooded embankment on all sides which would provide full screening to the landscape beyond. Due to these existing characteristics of the Site and its immediate surrounds, the Proposed Development’s impact on the appearance of the locality is considered negligible.

b) Take account of personal and community safety and security in the design and layout of development and public / private spaces.

13.2.18 The Proposed Development would be enclosed within a secure gated compound surrounded by a 2.4m weldmesh fence to prevent unauthorised access. It therefore accords with this policy criterion.

c) Make the best use of design techniques, siting and orientation in order to conserve energy and water resources.

13.2.19 A primary consideration for locating gas peaking plants adjacent to a NG substation is to avoid transmission losses (hence, energy conservation) as electricity is generated from the gas engines and transferred to the grid via the substation. The

location of the Proposed Development is therefore considered the most suitable and effective to reduce energy losses from the facility through its transmission to the grid.

d) Ensure safe and convenient pedestrian and vehicular access to and from development sites, both on site and in the nearby locality.

13.2.20 The Site is not available for public access. Vehicle access would be via the existing route through the NG substation complex to Bronwylfa Road.

e) Ensure that built development is located where it has convenient access to public transport facilities and is well related to pedestrian and cycle routes wherever possible.

13.2.21 Due to the nature of the proposals, the Site is restricted from public access and will exist as an unmanned operation, therefore the location to such infrastructure is not a required consideration.

f) Ensure the safety and amenity of the public and safeguard the environment from the adverse effects of pollution of water, land or air, hazards from industry and quarrying, and associated noise, odour or vibration arising from development.

13.2.22 The impacts of the Proposed Development on the environment in terms of noise and air quality have been thoroughly assessed through the appropriate site assessment works (see Appendix A and B respectively). The assessments concluded that the Proposed Development would not cause significant adverse impacts on the environment nor on public amenity. Where impacts were found to be adverse, appropriate mitigation measures have been incorporated to make the development acceptable. Furthermore, the Proposed Development would not cause any adverse effects on land or water pollution, or generate significant vibrations. As such, it is considered to conform with this policy criterion.

g) Secure public services (e.g. gas, water, electricity) to development at minimum public cost.

13.2.23 The Proposed Development would provide important public services through electricity generation infrastructure.

h) Safeguard sites and areas of nature conservation and wildlife interest, and to provide new habitats where there is an unavoidable loss of existing habitats and areas of wildlife interest.

13.2.24 The Site sits within a Local Wildlife Site, however, the Ecological Assessment (Appendix D) sets out that loss of land within the LWS could be compensated for through a Biodiversity Management Plan and GCN Mitigation Strategy (see section 9.0 and the Ecological Assessment for further details). This Management Plan would be agreed with WCBC's Ecologist before implementation. The Proposed Development is therefore considered to be appropriate in regard to this policy criterion.

i) Ensure that development does not result in, or is subject to, flooding, soil erosion, landslides or contamination, either on or off the site.

13.2.25 The Site is not within an area of Flood Risk. The Surface Water Drainage Assessment (Appendix F) concluded that the Proposed Development will considerably reduce the flood risk posed to the Site and to off-Site locations due to the adoption of a SuDS Strategy.

j) Have regard to the need to safeguard those areas that possess a strong Welsh cultural and/or linguistic identity from development that could harm this identity.

13.2.26 The Site does not sit within an area of cultural / historic value and is located adjacent to an existing substation complex, which itself harbours no value. The Proposed Development would therefore cause no harm to areas of strong cultural and/or linguistic identity.

k) Secure the development of sustainable communities, through the promotion of the economic, social and environmental well-being of the area.

13.2.27 The Proposed Development would support renewable energy generation in the local area, and together this infrastructure would support the sustainability of the local community through securing future energy needs.

Policy GDP2

13.2.28 This policy concerns the need for new developments to contribute towards community infrastructure where there might be deficiencies as a result of the development. By the very nature of the Proposed Development, it is supportive of this policy through its provision of energy generation infrastructure to support local communities, as well providing flexible energy generation to support existing and future renewable energy development projects.

Policy GDP3

13.2.29 Policy GDP3 concerns development proposals within the Borough's 'Green Barrier'.

The Site does not sit within the Green Barrier and therefore the policy is not applicable to the Proposed Development.

Policy EC4

13.2.30 This policy states that "*Development proposals should provide for the conservation and management of hedgerows, trees, orchards, woodland, wildlife and other natural landscape and water features, and include new planting in order to enhance the character of the landscape and townscape. Development which results in the loss or significant damage to valuable trees, important hedgerows or ancient woodland sites will not be permitted.*" The Arboricultural Impact Assessment (Appendix G) found that the overall quality and longevity of the amenity contribution provided for by the trees and groups of trees within and adjacent to the Site would not be adversely affected by the Proposed Development.

Policy EC5

13.2.31 This policy sets out that:

'Within Special Landscape Areas, priority will be given to the conservation and enhancement of the landscape. Development, other than for agriculture, small-scale farm-based and other rural enterprises, and essential operational development by utility service providers, will be strictly controlled. Development will be required to conform to a high standard of design and landscaping, and special attention will be paid to minimising its visual impact both from nearby and distant viewpoints.'

13.2.32 The Proposed Development sits within a Special Landscape Area as defined on the council's proposals map. However, the Site is heavily screened from the surrounding landscape due to the thickly wooded embankments to the east, north and west, whilst the existing Legacy substation complex and further woodland planting blocks views of the Site to the south.

13.2.33 With regard to the visual impact from nearby and distant viewpoints, the Proposed Development is supported by a full Landscape and Visual Impact Assessment (see Appendix C) which has assessed the impact of the Proposed Development on viewpoints in the surrounding landscape. The findings of the LVIA have previously been addressed under Section 8.0 of this Statement. To reiterate, the LVIA concluded

that the Proposed Development would be barely visible outside of the substation complex and would have no appreciable influence upon the wider landscape or views across it. Landscape and visual effects of the Proposed Development on the Special Landscape Area are therefore considered not significant.

- 13.2.34 The layout of the components of the Proposed Development on the Site has been designed to minimise its development footprint and thus reduce its impacts on the Special Landscape Area. The colour finishes of the components of the Proposed Development have been chosen to reduce visual intrusion. The Proposed Development is considered to comply with Policy EC5 in line with these matters discussed.

Policy EC6

- 13.2.35 Policy EC6 requires that:

'Development either within or close to sites of biodiversity interest will only be permitted where it can be clearly demonstrated that the need for the development outweighs the need to safeguard the intrinsic nature conservation value of the site. Where such development is permitted, damage should be kept to a minimum, and compensatory measures should be provided. Measures to improve the biodiversity value of sites and enhance their natural conservation interest and landscape quality including the establishment of local nature reserves, will be supported.'

- 13.2.36 The need and benefits of the Proposed Development have been fully addressed under Section 5.0 of this Statement. Appropriate mitigation measures have been set out within the Ecological Assessment under Appendix D. These mitigation measures not only seek to conserve the existing features of ecological value on the Site (e.g. through their translocation to other parts of the Site) but also enhance the biodiversity of the surrounding land (e.g. through bat and bird boxes). Furthermore, a great crested newt Mitigation Strategy has been prepared for the site (see appendix 3 to the Ecological Assessment Report) to enhance the existing great crested newt habitat in the surrounding LWS and provide improved habitat.

Policy EC12

- 13.2.37 This policy makes requirements for development to be directed away from sites of flood risk. As the Site sits within a Flood Zone 1, the development is not at significant risk of flooding and therefore accords with this policy.

Policy EC13

13.2.38 Policy EC13 requires that “*Development which would result in an unacceptable adverse impact on the water environment due to additional surface water run-off will not be permitted.*”

13.2.39 This application is accompanied by a Surface Water Drainage Assessment (Appendix F). The assessment demonstrates that the Proposed Development would be operated with minimal risk from flooding, would not increase flood risk elsewhere and is compliant with the requirements of the SuDS Standards. As such, it will not have an adverse impact on the water environment.

Policy T8

13.2.40 The delivery of parking spaces is set out within the policy of the UDP. The policy requires that developments provide vehicle parking spaces either on site or nearby, in accordance with the Council's current parking standards. Requirement for parking within the Site will be limited to the occasional maintenance engineer vehicle visiting the Site. Space for parking will be available with the hardstanding areas of the Site as shown on Planning Drawing 2658-01-05.

Policy T9

13.2.41 This policy requires that development proposals provide walking and cycling routes that link with existing or proposed walking and cycling, where feasible and appropriate. The proposed gas peaking plant will be a secure site with no public access. The surrounding land is in ownership of National Grid and the substation itself is also a secure complex. It is therefore not considered appropriate to incorporate additional walking and cycling routes near to such developments as this could encourage unauthorised access or vandalism.

13.2.42 It is noted that there is an existing public footpath which runs adjacent to the woodland embankment to the west of the Site. The proposals will not have any negative impact on the function of this path for its users.

Material Considerations

Wrexham Local Development Plan (LDP) 2013-2028 (April 2019)

Policy SP17: Minerals Supply and Safeguarding

13.2.43 The draft proposals maps for the Deposit Local Development Plan ('DLDP') indicates that the Site falls within an area of 'secondary resource – coal'. Policy SP17 protects such areas from unnecessary sterilisation, however, excavation of minerals here would also conflict with the designation of the area as an LWS. Additionally, the Site is within an enclosed area of the landscape where extraction would be considered unfeasible.

Policy NE2: Local Designations for Nature Conservation and Geological Importance

13.2.44 The Site sits within a Locally Designated site on the draft proposals map. Policy NE2 permits development within such sites only where it is demonstrated that:

- i. *there is no satisfactory alternative location for the development which avoids nature conservation impacts, and*
- ii. *compensation measures are designed to ensure that there is no reduction in the overall nature or geological conservation value of the site.*

13.2.45 As previously addressed within this Statement, the Proposed Development has gone through a site selection process, whereby the current location was considered one of the most suitable locations in the UK.

13.2.46 In consideration of point ii, the matter of mitigation measures has already been addressed in previous sections of this Statement (see section 9.0 primarily). These have been considered appropriated by WCBC to compensate for the harm caused by the proposals to the wildlife value of the Site.

Policy RE2: Renewable Energy Schemes

13.2.47 This policy is supportive of "*proposals to generate energy from renewable and low carbon sources*". The policy states that "*In assessing such proposals consideration will be given to the impacts of the development on the landscape, the number, scale, size, design and siting of renewable installations and associated infrastructure, alone, cumulatively and in combination.*"

13.2.48 In summary, the Proposed Development is considered to conform to the policies of the emerging DLDP policies. The DLDP position on energy developments is supportive, in line with the Welsh and UK Government's agenda.

Planning Policy Wales 10th Edition (December 2018)

13.2.49 Planning Policy Wales ('PPW') sets out the land use planning policies of the Welsh Government. Paragraph 1.2 of PPW states that "*The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales*".

13.2.50 In the context of energy policy, paragraph 5.7.1 states that "*The planning system plays a key role in delivering clean growth and the decarbonisation of energy, as well as being crucial in building resilience to the impacts of climate change. The transition to a low carbon economy not only brings opportunities for clean growth and quality jobs, but also has wider benefits of enhanced places to live and work, with clean air and water and improved health outcomes.*"

13.2.51 In addition, paragraph 5.7.7 sets out that "*The planning system should secure an appropriate mix of energy provision, which maximises benefits to our economy and communities whilst minimising potential environmental and social impacts.*"

13.2.52 Furthermore, paragraph 5.7.8 states that "*The benefits of renewable and low carbon energy, as part of the overall commitment to tackle climate change and increase energy security, is of paramount importance.*" The paragraph then goes on to list ways that the planning system should address this, which includes "*maximising renewable and low carbon energy generation*".

13.2.53 Under paragraph 5.7.4 it is stated that "*The Welsh Government is committed to delivering the outcomes set out in Energy Wales: A Low Carbon Transition... [The Welsh Government's] priorities are (inter alia):*"

- *reducing our reliance on energy generated from fossil fuels; and*
- *actively managing the transition to a low carbon economy.*

13.2.54 The Welsh Government document 'Energy Wales: A Low Carbon Transition' referenced under this paragraph has been previously identified under Section 5.0 of this Statement as supporting gas energy generation through its flexible, responsive, low carbon, and transitional qualities.

13.2.55 The PPW sets out Renewable Energy Targets, where the Welsh Government has targeted that 70% of its electricity consumption is to come from renewable energy by 2030 (under paragraph 5.7.16). To achieve this, a greater number of supporting balancing facilities will be required to ensure that energy generation is stable during

periods of low availability of renewable power (e.g. when wind levels are low for wind turbines).

- 13.2.56 Furthermore, paragraph 5.9.17 states that “*Planning authorities should give significant weight to the Welsh Government’s targets to increase renewable and low carbon energy generation, as part of our overall approach to tackling climate change and increasing energy security.*”
- 13.2.57 Under paragraph 5.9.8, the PPW states that “*Planning authorities should support and guide renewable and low carbon energy development to ensure their area’s potential is maximised.*” Where applications come forward for low carbon energy development which are outside of identified areas, the PPW is clear under paragraph 5.9.9 that such applications “*should be determined based on the merits of the individual proposal.*” The paragraph goes on to clarify that “*The local need for a particular [low carbon energy development] scheme is not a material consideration, as energy generation is of national significance and there is a recognised need to optimise renewable and low carbon energy generation.*”
- 13.2.58 In summary, the message from the latest edition of the PPW is clear in its support for low carbon and renewable energy generation developments in Wales. Such developments are considered pivotal to help the Welsh Government achieve its renewable energy targets of 70% electricity generation by 2030. The PPW is also clear that applications for such developments should also be supported by LPAs and determined on their merits. The Proposed Development would support this transition to a low carbon economy on the run-up to net zero by 2050.

Government Policy and Strategy

- 13.2.59 As set out in Section 5.0 of this statement, the Welsh and UK policy message on energy security is strong and unambiguous. There is a clear need to ensure security of supply through the development of a diverse energy generation system to support the increased deployment of renewable energy and increased peak demands.
- 13.2.60 The Proposed Development would provide the type of significant capital investment that the UK Government envisaged would come forward through the mechanisms promoted through EMR. In addition, it would assist in providing the flexible energy generation required in National Grid’s Future Energy Scenarios. It would provide a flexible modular energy supply which could deliver 49.5MW of power to respond the demands of the National Grid.

Draft National Development Framework

- 13.2.61 The Draft National Development Framework ('NDF') was consulted upon in late 2019. This document is intended to guide development in Wales up to 2040 and will sit alongside PPW. The NDF covers a range of issues and challenges which will need to be addressed in Wales, and energy production and decarbonisation feature at the forefront of these.
- 13.2.62 The NDF sets out 11no. 'Outcomes' which are the overarching ambitions based on the national planning principles and national sustainable placemaking outcomes set out in Planning Policy Wales. The 11no. outcomes are collectively a statement of where Wales needs to be in 20 years' time. Every part of the NDF, from the spatial strategy to regional policies, is concerned with achieving these Outcomes.
- 13.2.63 Outcome 11 states that: "*The challenges of climate change demand urgent action on carbon emissions and the planning system must help Wales lead the way in promoting and delivering a competitive, sustainable decarbonised society. Decarbonisation and renewable energy commitments and targets will be treated as opportunities to build a more resilient and equitable low-carbon economy, develop clean and efficient transport infrastructure, improve public health and generate skilled jobs in new sectors.*"
- 13.2.64 The policies of the NDF relating to renewable energy developments (namely policies 10 to 13) emphasise support for renewable energy (solar, wind and other types) at appropriate locations. Thus, the NDF will add a further dimension to the existing national agenda for decarbonisation across Wales, as addressed through PPW and other recent relevant guidance. Supportive low carbon energy developments (such as flexible generation plants) will therefore be all the more important in providing energy security and balance services to the Grid.

14.0 CONCLUSIONS

- 14.1.1 This Planning and Design and Access Statement has been prepared in support of an application made by Harbour Energy to install and operate eleven 4.5MW gas engines and ancillary equipment on land to the north of National Grid's 275/400kV Substation, Talwrn, Wrexham.
- 14.1.2 The Proposed Development would provide the type of significant capital investment that the UK Governments and National Grid envisaged would come forward through the mechanisms promoted through EMR. The flexible energy generation provided by the proposed gas peaking plant would assist National Grid's grid balancing services and support the ever increasing deployment of intermittent renewable energy and the move to electric vehicles. It would provide a flexible modular energy supply which could deliver 4.5-49.5MW of electrical power at short notice to respond the demands of the National Grid.
- 14.1.3 The proposed gas peaking facility sits within a heavily screened site, surrounded by a wooded embankment and the existing substation complex. The proposed facility would generate employment through both its construction and throughout its operation. The proposals are considered an appropriate design and scale and respond sympathetically to the location of the Site within the LWS.
- 14.1.4 Mitigation and ecological enhancement measures have been proposed for the Site and to the wider area within the LWS to ensure nature conservation and biodiversity gains are achieved through the proposals.
- 14.1.5 The Proposed Development would not have any unacceptable effects in respect of noise, air quality, contaminated land, heritage, flooding, nature conservation, transportation or landscape and visual matters.
- 14.1.6 An assessment of the Proposed Development against relevant planning policy and guidance has demonstrated that the scheme meets the tests of Section 38(6) of the Planning and Compulsory Purchase Act, as it accords with the policies of the statutory Development Plan. In addition, an assessment of relevant material considerations has not revealed any justification for determining the application other than in accordance with the statutory Development Plan.
- 14.1.7 In conclusion, and based on the findings of this statement, permission for the Proposed Development should be granted.

Appendix A:

Noise Impact Assessment

Appendix B:

Air Quality Assessment

Appendix C:

Landscape and Visual Impact Assessment

Appendix D:

Ecological Assessment

Appendix E:

Stage 1 Geo Environmental Assessment

Appendix F:

Surface Water Drainage Assessment

Appendix G:

Arboricultural Impact Assessment

Appendix H:

EIA Screening Opinion