DESIGN AND ACCESS STATEMENT

Uskmouth Power Station Conversion Project

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Contents

Tables

Figures

1 INTRODUCTION

1.1 This Design and Access Statement (DAS) is prepared on behalf of SIMEC Uskmouth Power Limited ('SUP') in respect of a full planning application for erection of silos, conveyors, de dusting plant, extension to rail unloading shed and ancillary development ('the Proposed Development') at Uskmouth B Power Station, West Nash Road, Nash, Newport NP18 2BZ ('Uskmouth Power Station'). SIMEC Atlantis Energy Limited ("Atlantis") are the developer of the overall 'Uskmouth Conversion Project' to convert Uskmouth Power Station from combusting to coal to fuel pellets derived from non-recyclable waste. Uskmouth Power Station is owned by SUP, a wholly owned subsidiary of Atlantis.

1.2 The planning application relates to the proposed operational development requiring planning permission and required to facilitate the conversion project.

1.3 The application site exceeds 1 ha in development area and therefore constitutes 'major' development as specified in the Town and Country Planning (Development Management Procedure) (Wales) Order 2012 (as amended). All major planning applications and those within Conservation Areas and World Heritage Sites for residential development or new floorspace over 100 sq m are required to submit a DAS.

1.4 The DAS has been prepared in accordance with the requirements of:

- The Town and Country Planning (Development Management Procedure) (Wales) Order 2012 (as amended);
- Planning Policy Wales, Edition 10, published December 2018 ('PPW');
- Technical Advice Note 12: Design, published July 2016 ('TAN 12'); and
- Design and Access Statements in Wales: Why, What and How, published June 2017.

1.5 Consideration has also been given to the relevant policies within the Newport Council Local Development Plan ('LDP'), adopted January 2015.

1.6 The remainder of the DAS is organised as follows. Section 2 summarises the planning policy context. Section 3 summarises the proposal. Section 4 sets out the brief and vision. Section 5 appraises the context of the development. Section 6 interprets the context and sets out the design principles applied to the proposals. Section 7 documents the design development. Section 8 summarises the accessibility of the site and proposals. Section 9 explains the design principles and concepts that have been applied to the development in respect of:

- Character;
- Community safety;
- Environmental sustainability; and
- Movement to, from and within the development.

1.7 Section 10 provides a summary and conclusion.

2 PLANNING LEGISLATION AND POLICY CONTEXT

2.1 National and local legislation and planning policies relevant to the Proposed Development are summarised below.

The Town and Country Planning (Development Management Procedure) (Wales) Order 2012 (as amended)

2.2 The Town and Country Planning (Development Management Procedure) (Wales) Order 2012 (as amended) sets out that, as a minimum, the DAS must:

- Explain the design principles and concepts that have been applied to the development;
- Demonstrate the steps taken to appraise the context of the development and how the design of the development takes that context into account;
- Explain the policy or approach adopted as to access, and how policies relating to access in the development plan have been taken into account; and
- Explain how any specific issues which might affect access to the development have been addressed.

National Planning Policy

2.3 Planning Policy Wales (PPW) and the accompanying Technical Advice Notes (TANs) set out the national planning policies of the Welsh Government and are material considerations in the determination of individual planning applications.

Planning Policy Wales, Edition 10, December 2018

2.4 PPW states its primary objective is to ensure that the planning system contributes to the delivery of sustainable development and improves the social, economic, environmental and cultural wellbeing of Wales, as required by the Planning (Wales) Act 2015 and the Well-being of Future Generations (Wales) Act 2015.

2.5 PPW emphasises ‘placemaking’ and defines good design at paragraph 3.3 as:

2.6 “Design is not just about the architecture of a building but the relationship between all elements of the natural and built environment and between people and places. To achieve sustainable development, design must go beyond aesthetics and include the social, economic, environmental,

2.7 cultural aspects of the development, including how space is used, how buildings and the public realm support this use, as well as its construction, operation, management, and its relationship with the surroundings area.”

2.8 PPW Figure 7 identifies the objectives of good design as follows:

1. Ensuring ease of access for all;
2. Sustaining or enhancing local character:
    a. Promoting legible development;
    b. a successful relationship between public and private space;
    c. quality, choice and variety;
    d. innovative design;
3. Ensuring attractive, safe public spaces / security through natural surveillance;
4. Achieving efficient use and protection of natural resources / enhancing biodiversity / designing for change;
5. Promoting sustainable means of travel.

2.1.1 The above is achieved through appraising context and considering:

- Access;
- Character;
- Community Safety;
- Environmental Sustainability; and
- Movement.

2.1.2 PPW emphasises that:

"Design is an inclusive process, which can raise public aspirations, reinforce civic pride and create a sense of place and help shape its future. For those proposing new development, early engagement can help to secure public acceptance of new development. Meeting the objectives of good design should be the aim of all those involved in the development process and applied to all development proposals, at all scales."

2.9 PPW paragraph 3.17 states a DAS communicates what development is proposed, demonstrates the design process that has been undertaken and explains how the objectives of good design and placemaking have been considered from the outset of the development process. In preparing design and access statements, applicants should take an integrated and inclusive approach to sustainable design, proportionate to the scale and type of development proposal. They should be 'living' documents dealing with all relevant aspects of design throughout the process and the life of the development, clearly stating the design principles and concepts adopted and include illustrative material in diagrams, plans, elevations and sections where relevant.

2.10 Paragraph 4.1.1 states that developments should enable people to access jobs and services through shorter, more efficient and sustainable journeys, by walking, cycling and public transport.

"By influencing the location, scale, density, mix of uses and design of new development, the planning system can improve choice in transport and secure accessibility in a way which supports sustainable development, increases physical activity, improves health and helps to tackle the causes of climate change and airborne pollution by:

- Enabling More Sustainable Travel Choices – measures to increase walking, cycling and public transport, reduce dependency on the car for daily travel;
- Network Management – measures to make best use of the available capacity, supported by targeted new infrastructure; and
- Demand Management – the application of strategies and policies to reduce travel demand, specifically that of single-occupancy vehicles."

Technical Advice Note 12: Design, March 2016

2.11 TAN 12 paragraph 6.17 states that a DAS is a statutory requirement for certain applications for planning permission.

2.12 TAN 12 explains that a DAS must explain the design principles and concepts that have been applied to the development in relation to the following aspects:

- Environmental sustainability;
- Movement to, from and within the development;
- Character (including amount, layout, scale, appearance and landscaping); and
- Community Safety.

2.13 The DAS must also:

- Demonstrate the steps taken to appraise the physical, social, economic and policy context of the development; and
- Explain how the design of the development takes that context into account in relation to its proposed use and each of the aspects specified above.

Technical Advice Note 18 (2007)

2.14 The Technical Advice Note (TAN) 18: Transport, published by the, then, Welsh Assembly Government, details how the integration of land use, planning and transport should be assessed and mitigated. It adopts a sustainable development approach, as stated within paragraph 2.2. This includes the following:

- Integration of transport and land use planning;
- Integration between different types of transport; and
- integration of transport policy with policies for the environment, education, social justice, health, economic development and wealth creation.

2.15 Paragraph 2.3 of TAN 18 states that integration can help achieve the following environmental outcomes, together with its wider sustainable development policy objectives by:

- Promoting resource and travel efficient settlement patterns;
- Ensuring new development is located where there is, or will be, good access by public transport, walking and cycling thereby minimising the need for travel and fostering social inclusion;
- Managing parking provision;
- Ensuring that new development and major alterations to existing developments include appropriate provision for pedestrians (including those with special access and mobility requirements), cycling, public transport, and traffic management and parking/servicing;
- Encouraging the location of development near other related uses to encourage multi-purpose trips;
- Promoting cycling and walking;
- Supporting the provision of high quality, inclusive public transport;
- Supporting provision of a reliable and efficient freight network;
- Promoting the location of warehousing and manufacturing developments to facilitate the use of rail and sea transport for freight;
- Encouraging good quality design of streets that provide a safe public realm and a distinct sense of place; and
- Ensuring that transport infrastructure or service improvements necessary to serve new development allow existing transport networks to continue to perform their identified functions.

2.16 Paragraph 3.7 of TAN 18 states that development plans should seek wherever possible to identify locations which offer genuine and easy access by a range of transport modes and therefore:

- *'Allocate major generators of travel demand … near public transport interchanges, as a means to reduce car dependency and increase social inclusion by ensuring that development is accessible by public transport for those without access to a car;*
- *Consider the potential for changing existing unsustainable travel patterns, for example through a co-ordinated approach to development plan allocations and transport improvements; and*
- *Consider the potential for changing existing unsustainable travel patterns, for example through a co-ordinated approach to development plan allocations and transport improvements.'*

2.17 Regarding pedestrian facilities, within paragraph 6.2 it is stated that when preparing development plans, design guidance, master plans and in determining planning applications authorities should:

- *'Ensure that new development encourages walking as a prime means for local journeys by giving careful consideration to location, access arrangements and design, including the siting of buildings close to the main footway, public transport stops and pedestrian desire lines.'*

2.18 Paragraph 6.2 also states that authorities should also ensure that pedestrian routes provide a safe and fully inclusive pedestrian environment.

2.19 Regarding cycling, paragraph 6.3 states that it has potential to act as a substitute for shorter car journeys in urban or rural areas, or form part of a longer journey when combined with public transport. Paragraph 6.4 stats that local authorities should aim to develop an effective network of cycle routes, including safe routes to schools. Development plans, design guidance, and master plans should include encourage cycling through the following measures:

- *'Identification of new cycle routes utilising existing highway (including public rights of way where appropriate), disused railway lines, space alongside rivers and canals, parks and open space;*
- *Ensuring that new development encourages cycling by giving careful consideration to location, design, access arrangements, travel 'desire lines' through a development, and integration with existing and potential off-site links;*
- *Securing provision of secure cycle parking and changing facilities in all major employment developments, including retail and leisure uses, town centres, transport interchanges, educational and health institutions;*
- *Securing provision of cycle routes and priority measures in all major developments;*
- *Adopting minimum cycle parking standards within their parking strategies - for commercial premises these standards should include cycle parking for both employees and visitors; and*
- *Ensuring new residential developments provide storage for bicycles so they are easily available for everyday use while secure enough to be left unattended for long periods of time.'*

Development Plan

2.20 The Development Plan for the purposes of Section 38(6) of the Planning and compulsory Purchase Act 2004 in this case is the Newport Local Development Plan (LDP).

2.21 The LDP Proposals and Constraints Maps indicate that the site is not allocated for any specific land use. However, it is affected by the following designations:

- 'The Levels' Archaeologically Sensitive Area (Policy CE6);
- Developed Coastal Zone (Policy CE9);
- Urban Boundary (Policy SP5);
- Flood Risk Zone B;
- Flood Risk Zone C1.

2.22 The site also adjoins the following designations:

- Countryside (Policy SP5)
- Special Landscape Area (Policy SP8 [iv and v]);
- Site of Special Scientific Interest: River Usk (Lower Usk);
- Ramsar and Special Protection Area (Severn Estuary);
- Special Area of Conservation (River Usk).
- National Nature Reserve.

2.23 A summary of the LDP design and access objectives and policies considered relevant to SUP is provided below.

2.24 Paragraphs 1.5 and 1.6 of the Local Development Plan (LDP) state that although industry was a mainstay of the Newport economy, it has gone into decline. As a result, regeneration is now a key part of the Plan, along with brownfield sites.

2.25 Paragraph 6.19 of the LDP states the following:

"Newport Docks provides a particular opportunity to provide for port related employment. One aspect of this is in energy generation, where it has certain locational advantages, including accessibility for fuel and distance from residential or other uses upon which there might be an

impact. Recent schemes granted planning permission have included a biomass powerplant, the erection of wind turbines and the installation of solar PV panels. Development that reduces emissions of greenhouse gases in a sustainable manner similar to those already permitted, including renewable and low carbon energy generation, will be supported."

2.26 Policy SP1 – Sustainability – states proposals will be required to make a positive contribution to sustainable development by concentrating in sustainable locations on brownfield land within the settlement boundary. They will be assessed as to their potential contribution to:

1. The efficient use of land;
2. The reuse of previously developed land and empty properties in preference to greenfield sites;
3. Providing integrated transportation systems, as well as encouraging the co-location of housing and other uses, including employment, which together will minimise the overall need to travel, reduce car usage and encourage a modal shift to more sustainable modes of transport;
4. Reducing energy consumption, increasing energy efficiency and the use of low and zero carbon energy sources;
5. The minimisation, re-use and recycling of waste;
6. Minimising the risk of and from flood risk, sea level rise and the impact of climate change;
7. Improving facilities, services and overall social and environmental equality of existing and future communities;
8. Encouraging economic diversification and in particular improving the vitality and viability of the city centre and district centres;
9. Conserving, enhancing and linking green infrastructure, protecting and enhancing the built and natural environment;
10. Conserving and ensuring the efficient use of resources such as water and minerals.

2.27 Policy GP4 – Highways and Accessibility – states highways and accessability development proposals should:

1. Provide appropriate access for pedestrians, cyclists and public transport in accordance with national guidance;
2. Be accessible by a choice of means of transport;
3. Be designed to avoid or reduce transport severance, noise and air pollution;
4. Make adequate provision for car parking and cycle storage;
5. Provide suitable and safe access arrangements;
6. Design and build new roads within private development in accordance with the highway authority's design guide and relevant national guidance;
7. Ensure that development would not be detrimental to highway or pedestrian safety or result in traffic generation exceeding the capacity of the highway network.

2.28 Policy GP6 – Quality of Design – states good quality design will be sought in all forms of development to create a safe, accessible, attractive and convenient environment. Proposals should consider the following fundamental design principles:

1. Context of the site: all development should be sensitive to the unique qualities of the site and respond positively to the character of the area;

2. Access, permeability and layout: all development should maintain a high level of pedestrian access, connectivity and laid out so as to minimise noise pollution;

3. Preservation and enhancement: where possible development should reflect the character of the locality but avoid the inappropriate replication of neighbouring architectural styles. The designer is encouraged to display creativity and innovation in design;

4. Scale and form of development: new development should appropriately reflect the scale of adjacent townscape. Care should be taken to avoid over-scaled development;

5. Materials and detailing: high quality, durable and preferably renewable materials should be used to complement the site context. Detailing should be incorporated as an integral part of the design at an early stage;

6. Sustainability: new development should be inherently robust, energy and water efficient, flood resilient and adaptable, thereby facilitating the flexible re-use of the building. Where existing buildings are present, imaginative and sensitive solutions should be sought to achieve the re-use of the buildings.

Other Material Considerations

Design and Access Statements in: Wales Why, What and How, June 2017

2.29 The Design and Access Statements in: Wales: Why, What and How, June 2017 guidance ('DAS guidance)' prepared by the Welsh Government suggests a structure as follows for DASs:

a. Summary of the proposal
b. The Brief and Vision
c. Site and Context Analysis
d. Interpretation
e. Design Development
    i. The Proposal
    ii. Character
    iii. Access
    iv. Movement
    v. Environmental Sustainability
    vi. Community Safety
    vii. Response to planning policy

2.30 The DAS guidance states this broadly follows the stages of the design process so, as each stage of the process is undertaken, the content of the document can be developed.

Planning Policy Context Summary

2.31 In summary, national and development planning policies support proposals whose design and access requirements are suitable for their context. The remainder of this report is structured as per the recommendations within the Welsh Government's most recent DAS guidance summarised above.

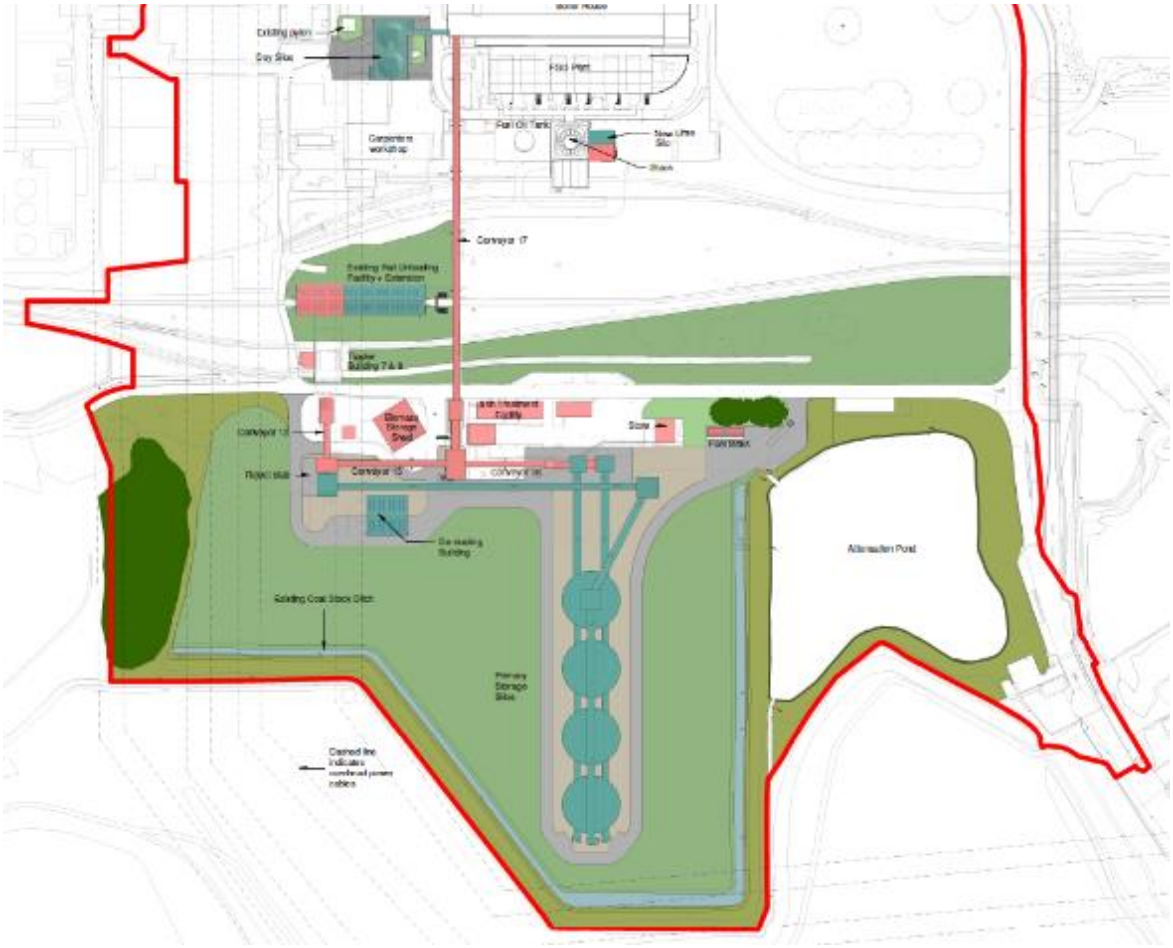
3 DESCRIPTION OF PROPOSAL

3.1 The Proposed Development comprises auxiliary infrastructure to enable the importation, storage, transfer and combustion of a new fuel pellet derived from non-recyclable waste at Uskmouth Power Station as follows:

- Construction of fuel storage silos, day silos and conveyor systems;
- Fuel de-dusting building;
- Upgrade to existing rail fuel unloading facilities; and
- Vessels and infrastructure for the delivery and storage of flue gas treatment (FGT) reagents and transportation of residues.

3.2 An extract of the proposed layout showing the location of the new buildings and structures is shown in Figure 1 below.

Figure 1: Proposed Site Plan Extract



3.3 A summary of the dimensions of the new buildings and structures is provided within Table 2 below.

Table 1: Summary of new buildings and approximate dimensions

Building	Approx. Dimensions	Approx. Height above ground level (AGL)
Day Silos (x2)	15 m radius	24 (31 m including head house)
De-dusting Building	20 m x 20 m	10 m
Lime Silo (external cladding extension)	8.5 m x 5 m	23 m
Primary Storage Silos (x4)	34 m radius	42 m (48 m including head house)
Rail Unloading Facility Extension	40 m x 15 m	8 m

3.4 The outward appearance of the existing power station buildings and exhaust stack would remain unchanged. The visible difference will be new fuel storage silos connected to the existing plant with new and refurbished conveyors. The primary storage silos would be constructed on the previous coal storage area. The footprint of fuel pellet storage silos is smaller than that required for the external storage of coal. As a result, sections of the previous coal stockyard will be re-vegetated.

3.5 No demolition is required for the proposed development, the existing infrastructure will be reused where possible. The conversion process including, construction of the silos and conveyors, access and conversion of equipment within the power station buildings is anticipated to take around 18 months.

Fuel Storage Silos

3.6 The fuel pellets will be stored in up to four primary storage silos, each with a volume of up to 18,000 m3, which will hold up to approximately 10,000 tonnes of pellets.

3.7 Two day silos, each holding up to 1,600 tonnes of pellets, will be used during the transfer of the fuel pellets from primary storage silos to the milling process within the existing main power station building.

3.8 The storage silos will be sealed as far as is practicable to capture potential fugitive dust generated during filling and discharge. Dust is captured from displaced air by fan-assisted reverse jet filters in the loading points. The captured dust, which is useable as fuel, will be reintroduced to the storage silo at a controlled rate. The silos will be fitted with level indicators and filling controls to prevent overfilling.

3.9 A new lime silo would be constructed adjacent and immediately to the north of the existing lime silo to the east of the exhaust stack. The new lime silo will be up to 8.5 m x 5 m and 23 m high (including the head house).

De-Dusting Building

3.10 The dedusting building will remove the excess dust generated from the fuel pellets as they are conveyed to storage. The excess dust is collected for use in the combustion process. The proposed de-dusting building would be up to 20 m by 20 m, with a height of up to 10 m.

Rail Unloading Facility

3.11 Fuel pellets will be delivered by rail (consistent with previous coal deliveries) to an existing rail unloading facility which will be extended upgraded as part of the proposals. Four train deliveries will take place per day; each train carrying up to 1,000 tonnes of fuel pellets. Within the rail unloading building, the rail cars will be emptied via bottom discharge onto an under-track hopper conveyor. From the rail unloading facility, fuel pellets will be transferred to the primary storage silos via existing (and new) enclosed conveyors.

Conveyors

3.12 The existing conveyor system will be upgraded. Fuel pellets will then be transferred from the primary storage silos via conveyors to the day silos for discharge via a pneumatic transport system to feed the mills.

Staffing and shifts

3.13 The new operational organisation will have approximately 50 – 100 staff, with an anticipated minimum net increase of 15 staff. It is anticipated there will be four operational shifts with staff working a 24-7 shift rota. The remaining personnel will consist of day staff generally working between 7:00 am and 5:00 pm.

Access and Parking

3.14 The site has one entrance accessed via a 24/7 manned security gatehouse. The planned development involves no new access routes, pedestrian routes or cycle ways.

3.15 The access roads within Uskmouth Power Station will be mostly unchanged, except for vehicular access south of the existing pump house, here the road will be diverted around the two proposed day storage silos. Existing car parking facilities will remain unchanged.

4 THE BRIEF AND VISION

4.1 The brief for the Uskmouth Power Station Conversion project provides the starting point for the design response. The brief and vision for the development is set out below.

The Brief

4.2 Uskmouth Power Station Conversion intends to utilise where possible the existing infrastructure for the handling, milling and combustion of fuel; and to reuse or reconfigure existing equipment to accommodate the combustion of the waste-derived fuel pellet. The Uskmouth Power Station will be updated to efficiently combust the fuel pellets (and, if required, biomass) and to limit the emission of gaseous pollutants in line with the NRW permit.

The Vision

4.3 Create a ‘world first’ in terms of a successful blueprint for the conversion of other coal fired power stations destined to be decommissioned to generate electricity through combustion of waste derived fuel pellets , providing instead an extended period of valuable service in compliance with up-to-date emissions regulations and with materially lower levels of CO_2 emissions. This project is expected to help the transition of the local economy and workforce in Newport from a historic reliance on coal to a new, sustainable future, whilst at the same time providing an economically viable alternative to landfill of waste and addressing the issue of non-recyclable plastics.

5 SITE AND CONTEXT ANALYSIS

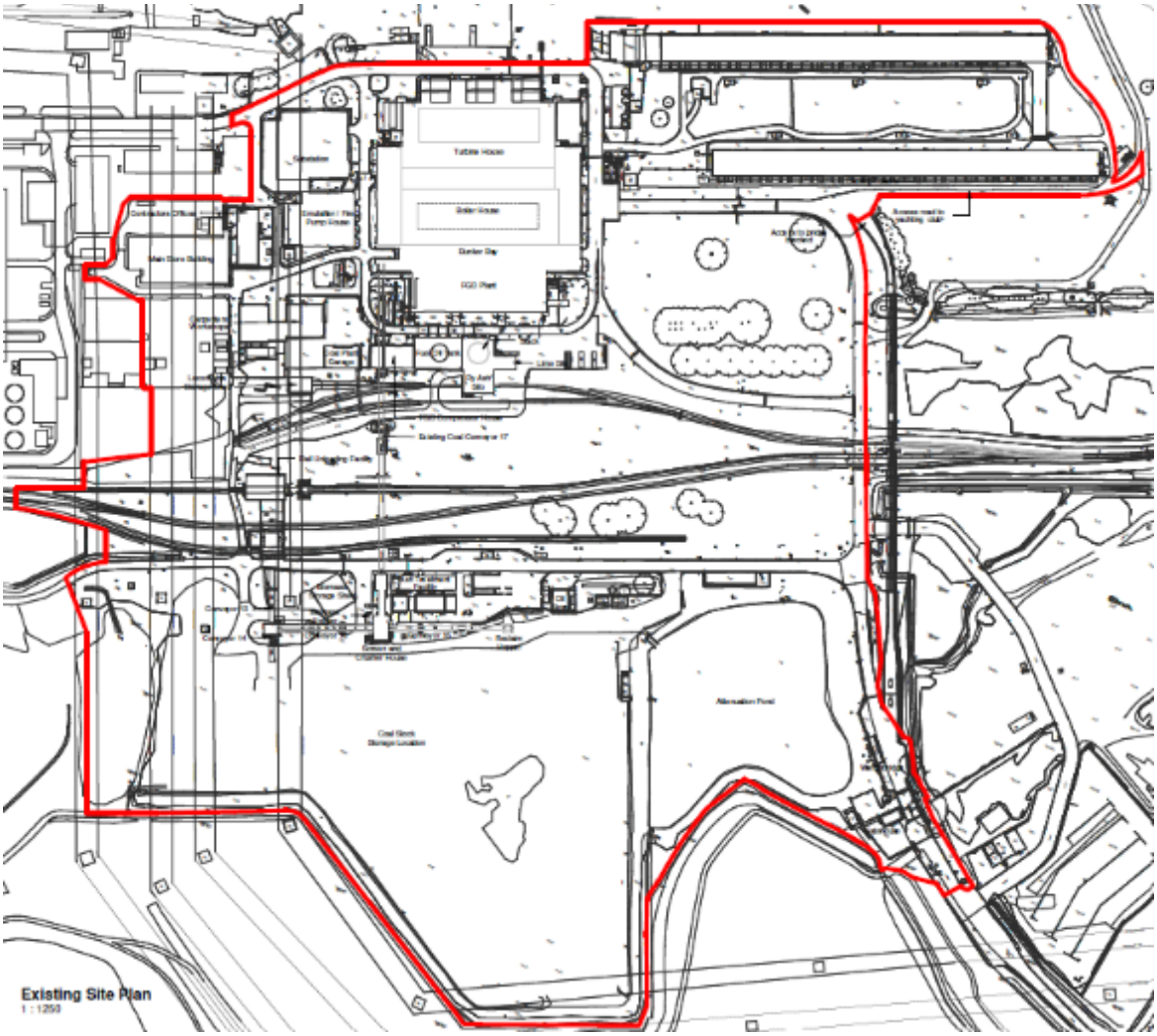
5.1 The Uskmouth Power Station site is located on the eastern bank of the River Usk, close to the confluence with the Severn Estuary, around 4 km south of central Newport. The grid reference is ST 32830 83838 and the site address is Simec Uskmouth Power, West Nash Road, Nash, Newport, NP18 2BZ. Figure 1 shows the site location while Figure 2 shows the redline boundary.

5.2 The current site comprises:

- The main power station buildings housing furnaces, boilers, steam turbines and electrical generators;
- Offices, workshop buildings, storage and car parking;
- Two linear banks of cooling towers;
- A single exhaust stack;
- A coal storage area, conveyor systems and pulveriser mills;
- A pulverised fuel ash storage area;
- Railway tracks and coal unloading facility;
- Electrical export equipment; and
- Areas of landscaping and surface water drainage including a large attenuation pond.

5.3 Figure 2 below illustrates the arrangement of the existing site in plan.

Figure 2: Extract of Existing Site Plan – Application Boundary



Accessibility

5.4 The accessibility of the site is considered in detail in section 8 of this document.

Surrounding Character Analysis

5.5 Immediately to the west, the site adjoins the Severn Power combined cycle gas turbine (CCGT) power station, constructed in 2007 on the site of the former Uskmouth A coal-fired power station.

5.6 Immediately to the north is the River Usk and, in the north-east, Newport Uskmouth Sailing Club; to the east is the railway line, a mixture of land with vegetation, hardstanding and a sewage treatment works; and to the south, former ash pits (now vegetated), beyond which is the Newport Wetlands national nature reserve.

5.7 The wider site setting is industrialised to the north, with the Liberty Steel works and industrial estates on the east bank of the River Usk stretching from the proposed development site to the A48 'Southern Distributor Road' dual carriageway through the outskirts of Newport.

5.8 The River Usk and the Severn Estuary lie beyond the CCGT power station, and the Newport Wetlands lie to the west and south. On the west bank of the Usk is Alexandra Docks, with commercial and industrial land-uses.

5.9 To the east, the wider setting is rural, with farmland, minor roads, reens (drainage channels) and individual or small groups of houses. The nearest settlement is the village of Nash, at a little over 1 km from the proposed development site.

Historic Context

5.10 Uskmouth Power Station historically comprised of two power plants: Uskmouth A (decommissioned in 1990s) and Uskmouth B coal-fired power station. The proposed development would be implemented entirely within the site of the existing Uskmouth B coal-fired power station, referred to as Uskmouth Power Station.

5.11 Uskmouth B power station was constructed in the late 1950s and early 1960s, reaching full commercial operation in 1962, with generation capacity of up to 363 MWe. It was closed in 1995 before undergoing refurbishment to increase capacity to 393 MW and re-commenced electricity generation in 2001. The power station was again closed in 2014, re-opening in 2015.

5.12 Uskmouth Power Station has not generated electricity on coal since a technical fault in April 2017. However, since this time Uskmouth Power Station has retained staff with critical skills for preservation and maintenance of the plant in readiness for return to service. Uskmouth Power Station has completed the removal of damaged equipment following the technical fault and continued to make significant investment and progress with the Front End Engineering Design (FEED) to repurpose the existing site to combust waste derived fuel pellets to the present day.

Planning History

5.13 A Lawful Development Certificate for a peaking power plant and advanced conversion technology power plant (ACT, a gasification process for waste) was granted in April 2016 (Newport City Council reference 16/0257) on parts of land within the Uskmouth Power Station site. The peaking power plant has not been constructed.

6 INTERPRETATION

6.1 Having regard to the context and planning history of the site and the surrounding area, the following principles were applied to the redevelopment of the site:

1. Utilise where possible the existing infrastructure and upgrade where necessary;
2. Fuel silos to be no taller than the existing main power station building (circa 50 m);
3. All fuel deliveries to continue via rail unloading facility where possible and this to be upgraded as necessary;
4. Minimise impact on biodiversity and enhance where possible;
5. Minimise impact on residents of Nash and in the vicinity of the site wherever possible;
6. Process and combust the fuel pellets as efficiently as possible;
7. Limit the emission of gaseous pollutants.

6.2 The brief and vision for the Conversion project required the creation of a ‘world first’ in terms of the utilisation where possible of the existing infrastructure for the handling, milling and combustion of fuel; and to reuse or reconfigure existing equipment to generate electricity generated through the combustion of waste-derived fuel pellet.

6.3 The combination of the above principles, brief and vision guided the development design, which is documented in the following section.

7 DESIGN DEVELOPMENT

7.1 This section explains the iterative design process and why certain design decisions have been made. As this DAS is a pre-application consultation document it does not include any discussions on consultation with the local community, statutory and non-statutory consultees and stakeholders currently.

Project Inception Stage: Two Projects

7.2 In late 2018, the project team was assembled to develop two briefs for the wider Uskmouth Power Station site:

1. **Uskmouth Power Station Conversion** - Utilise where possible the existing infrastructure for the handling, milling and combustion of fuel; and to reuse or reconfigure existing equipment to accommodate the combustion of the waste-derived fuel pellet. The Uskmouth Power Station plant will be updated to efficiently combust the fuel pellets (and, if required, biomass) and to limit the emission of gaseous pollutants in line with the NRW permit.
2. **Construction of Pelleting Plant** - Erect a waste pelleting plant capable of producing approximately 550,000 tonnes of waste derived fuel pellets for combustion at the converted Uskmouth Power Station.

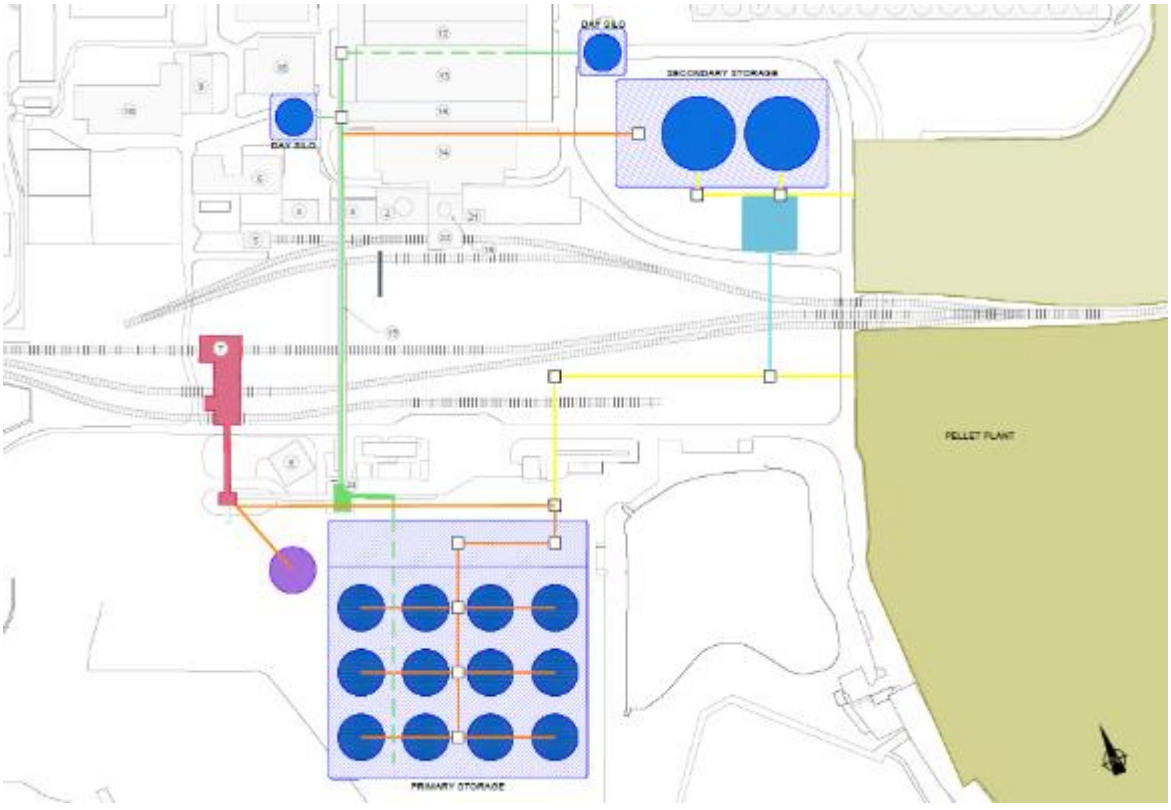
7.3 For the reasons documented below, it was decided not to proceed with item 2 above.

January 2019 Initial Designs

7.4 In the initial stages of the design development, the projects for (1) the conversion of SUP and (2) the pelleting producing facility were progressed by two separate companies.

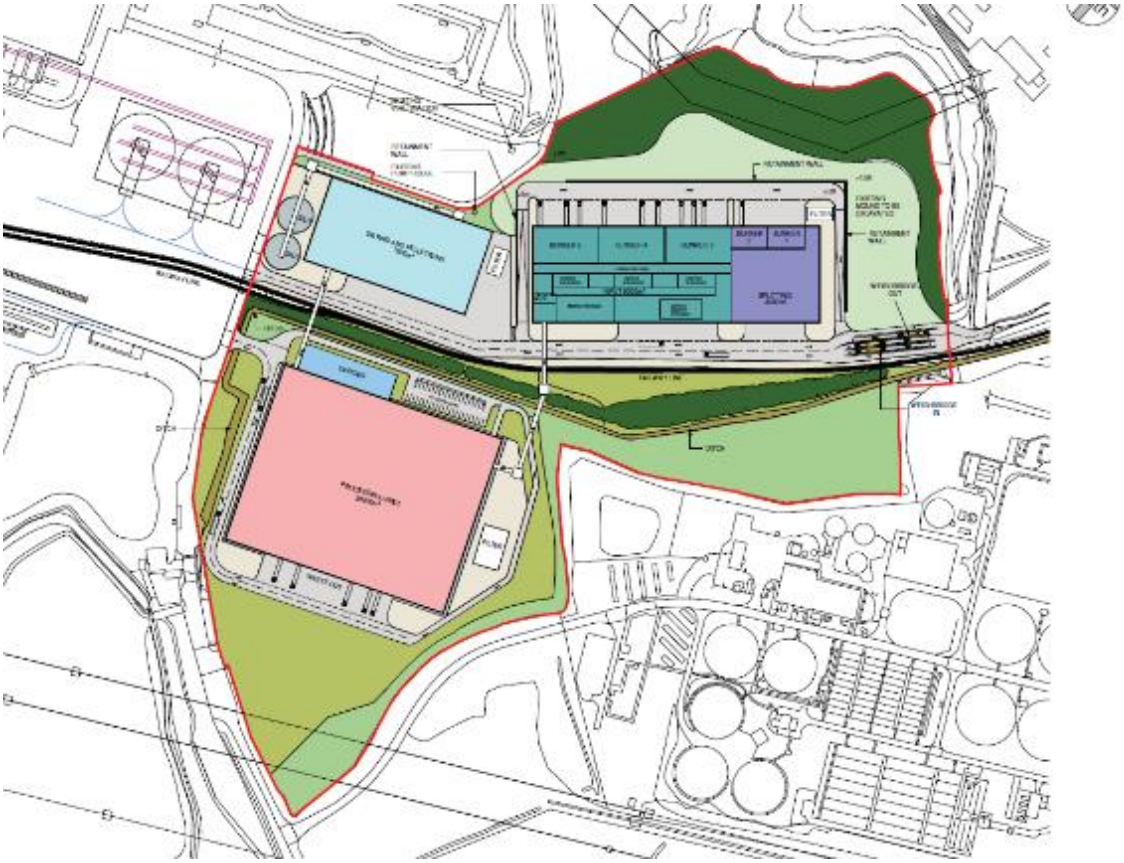
7.5 Figure 1 below illustrates the initial design of the site to accommodate the change of fuel at the Uskmouth Power station site.

Figure 3: Initial Sketch of Uskmouth Power Station Conversion Site Plan



7.6 At this time, it can be seen that twelve storage silos and two further secondary storage silos were proposed, in addition to a road fuel offloading facility and no upgrade to the rail offloading facility.

7.7 Regarding the pelleting plant, this was considered for the northern part of the Uskmouth Power Station site, north of the existing road overpass and either side of the railway leading to the Uskmouth site. Road access through the adjoining Liberty Steel Newport (LSN) site, which is owned by a major shareholder in SUP, into Uskmouth Power Station.



7.8 The new road through LSN linking up with Corporation Road further to the north was to be progressed by a separate project team.

7.9 The pelleting plant comprised the following elements:

- Weighbridge;
- Storage bunkers and waste splitting building;
- Above ground conveyor system over railway;
- Waste processing building;
- Waste drying and pelleting building;
- Two storage silos.

7.10 The pelleting plant would have received circa 533,871 tonnes per annum of non-recyclable waste otherwise destined for landfill, imported via road on HGVs through LSN. Approximately 218,081 tonnes of waste was likely to have been rejected due to being unsuitable for pelleting and exported via HGV and the new road. This would have generated circa 117 daily HGV movements.

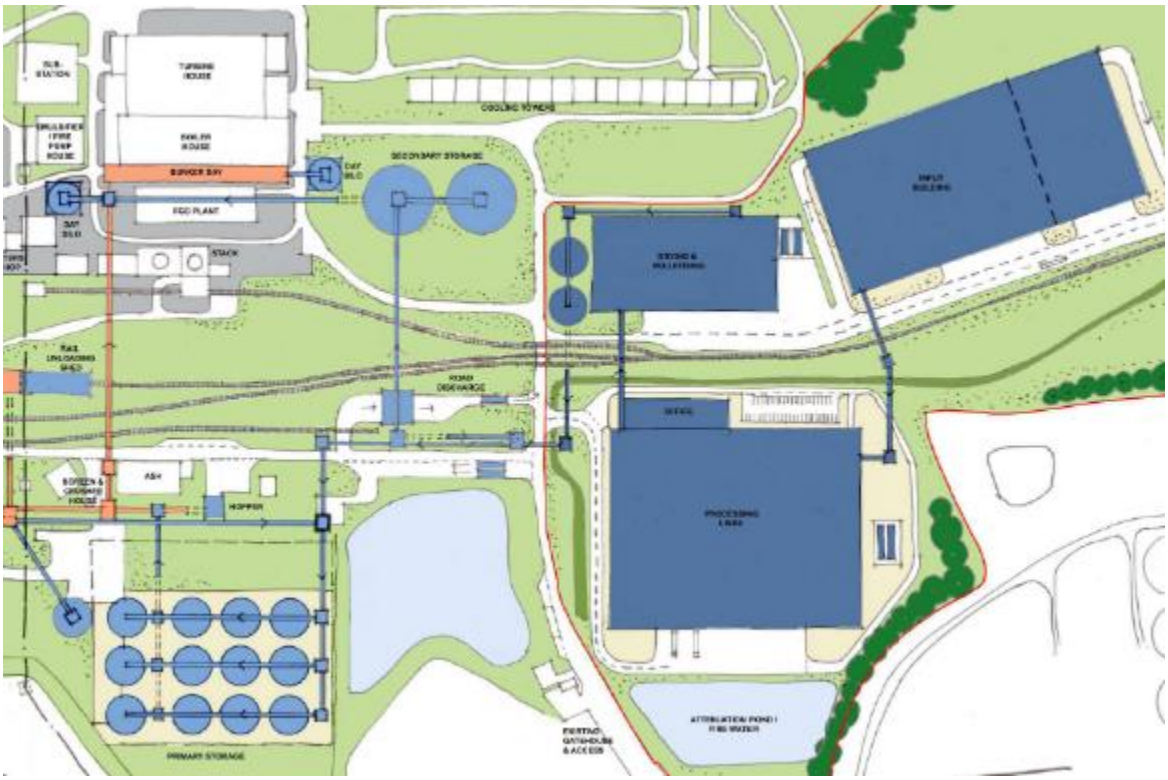
7.11 These designs were progressed and updated over several months taking into account surveys and specialist inputs until the projects were mature enough to discuss externally through the pre-application advice process.

May 2019 Pre-Application Advice Stage

7.12 On 7 May 2019 a pre-application advice enquiry was submitted to Newport City Council regarding the proposals. By this time the design was now within the scope of a single project design team.

7.13 Figure 4 below illustrates an extract sketch from the Proposed Site Plan submitted with the pre-application advice enquiry.

Figure 4: Pre-Application Advice Stage Proposed Site Plan Sketch



7.14 It is similar to the previous iteration, with the exception that and extension to the rail unloading facility is now indicated and the road unloading facility has been relocated, while the silos have been modified slightly in terms of their arrangement.

December 2019 Environmental Impact Assessment Scoping Stage

7.15 By late 2019 it had been decided not to construct the pelleting plant.

7.16 By late 2019 it had also been decided not to construct the Access Road through LSN to Uskmouth Power Station

7.17 The development of the pelleting plant was considered technically feasible. However, it was felt that these projects would have conflicted with the design teams' principles 4 and 5 regarding biodiversity and impact on communities in the vicinity. In addition, the cancellation of the M4 Corridor around Newport project also made delivery of waste to and from the proposed pellet plant site via road less attractive.

7.18 The EIA Scoping Request submitted 23 December 2019 described a project similar to that currently accompanying this DAS in terms of the following changes from the previous iteration:

- Access road through LSN removed;
- Pelleting plant removed;
- Removal of road unloading facility;
- Removal of secondary storage silos;

- Reduction in number of primary silos from twelve to four.

7.19 The current design is detailed in Section 3 of this document.

8 ACCESS

8.1 This section of the DAS assesses the accessibility of the proposed development. Further detail in respect of the accessibility of the site is contained within the accompanying Transport Assessment.

Access

8.2 Uskmouth B power station is accessed from West Nash Road, a single carriageway road generally 6-6.5 m in width. West Nash Road primarily has the typical characteristics of a rural road with a 60 mph speed limit, no footways or street lighting, with grass verges and hedgerow on both sides of the carriageway. This would be retained as the only access to the site.

8.3 The West Nash Road access route has been used as an HGV and staff access route during the operation of Uskmouth B Power Station since 1959. The proposals will therefore replicate the previous operational access route.

8.4 There is no recorded history of any issues associated with the former use of this access route during the operation of Uskmouth B as demonstrated by an analysis of road safety data.

Pedestrian Access

8.5 There are pedestrian facilities extending from Nash towards the site in the form of a footway on the southern side of the carriageway with street lighting which stops approximately 1.4km from the site access. The footway extends to the east from Nash to the West Nash Road / Nash Road junction, where it continues north along the eastern side of the carriageway for approximately 500m.

8.6 There are several Public Rights of Way (PRoW) within the vicinity of the site. Footpaths 401/12/1 and 401/16/1 route along the southern boundary of the power station and through the Wetlands to join footpath 401/15/2. Footpath 401/15/2 routes broadly east-west towards Nash through farmland.

Cycle Access

8.7 The nearest National Cycle Route is Route 4, a long distance route between London and Fishguard via Reading, Bath, Bristol, Newport, Swansea, Carmarthen, Tenby, Haverfordwest and St. Davids. Route 4 routes west to east through the south of Newport, with the traffic-free route on Corporation Road to the north of the site. As Route 4 routes south of Corporation Road, the combined foot / cycleway routes away from Corporation Road and routes along a Public Right of Way towards Nash Road. Traffic flows along West Nash Road and Nash Road are sufficiently low to be conducive to cycling.

Public Transport Access

8.8 The RSPB Newport Wetlands site, approximately 350m from the site access, has a bus stop from which the number 63 service is operated by Newport Bus. The service operates between Newport Bus Station and the Wetlands Reserve with two services per day, arriving at 08:06 and 16:16 and routing back to Newport Bus Station.

Disabled Access

8.9 Disabled persons will be able to access the site via the modes above.

Fuel delivery

Rail

8.10 The Uskmouth Power Station site has historically received fuel (coal) via the existing rail connection and off-loading facilities. Refurbishment and extension of the existing rail unloading hopper will ensure that bulk deliveries of fuel pellets can be handled in a timely manner. The proposed extension to the existing rail unloading facility would be up to 40 m in length, with height and width matching the existing building (approximately 8 m and 15 m respectively). Table 2 below sets out the anticipated rail logistics strategy that is considered in the EIA.

Road

8.11 Road delivery of fuel pellets would not be required under normal circumstances. However, road deliveries may be required following major incidents on the rail network. Historically, rail deliveries have been very reliable with only 2 days un-planned rail network closure over the last 20 years. The proposed primary storage silos would contain up to 7 to 10 days' worth of fuel suggesting that any future unplanned rail closures are likely to be accommodated without requiring road deliveries.

8.12 Under some circumstances, rail disruption may be as a result of maintenance works to the rail line. However, this would occur on a planned basis, allowing fuel pellets to be stockpiled accordingly.

Biomass fuel delivery – road

8.13 As outlined above, as well as fuel pellets, around 10ktpa biomass fuel may be required to co-fire along with the fuel pellets. In the event that biomass fuel is required, it would be delivered by road replicating previous biomass deliveries to Uskmouth Power Station (see Table 2 below).

Operational Consumables – road

8.14 In addition to mains water, the facility will continue to utilise the following raw materials in line with the existing environmental permit:

- Lime, urea and ammonium sulphate (reagent for flue gas treatment);
- Gases, chemicals and general stores; and
- Gas oil / diesel (auxiliary and back-up fuel).

Lime

8.15 Lime would be used in the flue-gas treatment (FGT) process. It is anticipated that approximately 52,000 tonnes per annum of lime will be delivered to the site. The lime used in the FGT system is removed from site within the Air Pollution Control residue (APCr) composed of fly ash and FGT reaction products.

Ash

8.16 Combustion of the fuel pellets is expected to produce around 15% ash by mass, similar in quantity to the ash production at the coal fired power station. The ash is composed of approx. 80% fly ash and 20% furnace bottom ash (referred to as 'bottom ash').

8.17 Around 174,240 tonnes Air Pollution Control residue (APCr) composed of fly ash and abatement products would be produced per annum. APCr is discharged into enclosed road tankers via a sealed connection and transported off-site by road for disposal.

8.18 Around 30,750 tonnes of bottom ash is produced per annum. The nature of bottom ash handling systems following the Uskmouth Conversion will be determined during FEED and design phases of the Conversion Contractor. It is anticipated bottom ash will be transported off-site by road for disposal.

8.19 Resulting in around 153,740 tpa of ash to be removed from site by road for disposal (a fairly similar proportion to historical ash from coal combustion). When combined with the limestone used in the FGT process this would equate to around 200kTper annum to be transported offsite by road.

Reagents

8.20 In addition to those raw materials listed above, it is anticipated the converted Uskmouth facility may utilise ammonium sulphate, urea and activated carbon for further flue gas treatment.

8.21 It is anticipated that around 2,430 tonnes per annum of urea and 920 tonnes per annum of ammonium sulphate would be required in the flue gas treatment process for each combustion unit operating at 90% load. The final design of these processes and required equipment modification will be determined during FEED and the detailed design phase by the Conversion Contractor.

Operational consumable deliveries

8.22 The converted Uskmouth Power Station will require other operational consumables delivered by HGV including fuel oil and other general supplies. The anticipated maximum daily HGV movements are shown in Table 2.2 below.

Vehicle Movements

Table 2: Anticipated logistical movements

Product	Tonnes per annum @ 90% utilisation	Mode	Movements per day [a]
Fuel pellets	1,024,920	Rail	4
Biomass	10,249	HGV	3
Ash & Limestone	204,984	HGV	54
FGT reagents	3,352	HGV	2
Other	N/A	HGV	2

[a] All movements are two way.

Operational Staff Parking

8.23 The new operational organisation will have approximately 50 - 100 employees. There will be four operational shifts with 7 operational personnel per shift on twelve-hour days and nights, four on-four off, in addition to daytime staff, some of which have been retained on site following the closure of Uskmouth B. Overall, there would be a net increase of 15 staff at the site.

8.24 On a typical day, there will be two 12-hour shifts from 07:00 to 19:00, and 19:00 to 07:00, each with 7 members of staff. The remaining staff will be daytime staff already employed at the site and as such, will already be accounted for within the traffic surveys.

8.25 There is existing parking on site associated with the offices and workshops and this parking area will be available to all staff on site as a result of the proposed development.

Access Summary

8.26 This section has demonstrated that the proposed development is accessible to all those persons, vehicles and materials that require access to it.

9 DESIGN

9.1 This section discusses the design concepts and principles of the development with regard to:

- Character (including amount, layout, scale, appearance and landscaping);
- Community Safety;
- Environmental Sustainability; and
- Movement to, from and within the development.

Character

9.2 The existing character of the Uskmouth site is that of mid to late 20th Century industrial, which is reinforced by the surrounding presence of the LSN steelworks site to the north, the sewage treatment works, wind turbine and electricity transmission lines to the east and the modern Severn Power gas fired power station to the west of Uskmouth Power Station.

9.3 The proposed development is consistent with this character and does not propose any structure taller than the existing main Uskmouth Power Station building or any other structure in the vicinity, many of which are much taller or substantial in terms of scale.

Amount

9.4 Regarding amount, the proposed development does not create a disproportionate quantity of new floorspace. The proposed primary fuel storage silos are situated above and well within the former coal stock yard footprint and will accommodate a broadly similar quantity of fuel.

Layout

9.5 The existing site layout is not altered significantly by the proposed development, with fuel pellets stored on the previous coal stock yard.

Scale

9.6 The scale of the proposed development is considered in keeping with the local context. While the proposed silos are large, they are of smaller scale than many other structures in the vicinity.

Appearance

9.7 The appearance of the proposed development will be industrial and utilitarian, which is considered appropriate within the context of an industrial power station site and the surrounding industrial context.

Landscaping

9.8 Landscape proposals have been proposed to provide treatments for the western side of the Uskmouth Power Station to help screen views from the west towards the development.

Community Safety

9.9 Safety and security is of the highest importance at the existing site and this would be maintained during the next operational phase of Uskmouth Power Station . The site boundary treatments (those elements which define the extent of the development site) will not change as a result of the proposals and community safety will be ensured through the continued security and safety measures in place at the site.

Environmental Sustainability

9.10 The conversion project makes use of an existing brownfield site and reuses existing infrastructure and buildings as far as possible. Proposed development is minimised to that required to enable the power station to function safely and efficiently and an alternative fuel.

9.11 The proposed development will facilitate a change of fuel comprising pellets derived from presently non-recyclable waste, aligned with objectives of towards zero landfill.

9.12 Ash residue from the combustion of the fuel pellets is proposed to be used as building aggregate and recycled wherever possible.

Movement To, From and Within the Development

9.13 The proposal does not significantly alter movement to, from and within the development significantly when compared with previous operational activity at Uskmouth Power Station.

10 SUMMARY AND CONCLUSION

10.1 This DAS has considered the design and access issues associated with the planning application for:

- Construction of fuel storage silos, day silos and conveyor systems;
- Fuel de-dusting building;
- Upgrade to existing rail fuel unloading facilities; and
- Vessels and infrastructure for the delivery and storage of flue gas treatment (FGT) reagents and transportation of residues.

10.2 The conversion project represents an efficient use of an accessible brownfield site with existing rail infrastructure for delivery of fuel and for the transmission of electricity produced, generating investment and jobs and making a sizeable contribution to the economy of Newport.

10.3 Regarding the proposed operational development requiring planning permission, it is industrial and utilitarian in nature and considered appropriate to its context and in keeping in terms of scale. The outcome is development that will integrate well with its surroundings.

10.4 Regarding access, the DAS demonstrates that the site lies in a location that is accessible for its purpose.

10.5 In conclusion, the DAS has demonstrated the proposed development's compliance with national and local design and access policies. Consequently, there are no design and access reasons why planning permission should not be granted.