

Air Quality

The construction, operation and decommissioning of the Project all have the potential to affect air quality.

Preliminary Assessment

A desk based assessment, including the baseline environment in the local area and air dispersion modelling, has been carried out to assess any potential air quality effects resulting from the Project on identified residential and ecological receptors. This assessment considers generation of dust during the construction and decommissioning phases, as well as the generation of stack emissions during operation. The steps we have taken to assess and mitigate this are outlined below.

Construction and Decommissioning

Dust may result from works during construction, such as earth moving operations for new foundations, and for the Gas Connection and Electrical Connection. The volume of traffic during construction and operation is expected to be small and, as a result, impacts from vehicle exhaust emissions will be temporary and localised in nature.

Operation

The Generating Equipment has the potential to affect air quality through the emission of flue gases resulting from the combustion of natural gas. This includes the release of oxides of nitrogen (NOx). Modern gas fired power plants are, however, inherently cleaner and produce far fewer emissions than other fossil fuel power plants when compared on an energy output basis. Emissions from the Generating Equipment are also limited by the number of hours the Project can operate.

Proposed Mitigation Measures

Mitigation against the unwanted spread of dust would be addressed by the Construction Environmental Management Plan (CEMP) through appropriate dust mitigation measures such as covering stockpiles or dowsing them with water during dry, windy conditions. A Construction Traffic Management Plan will be prepared to minimise the increase in congestion and vehicle emissions. Mitigation against negative effects resulting from flue gas emissions during operation is to be achieved through appropriate plant design – most notably through correct stack height. In order to determine stack height, air quality impact assessments have been undertaken using air dispersion modelling. The results of these assessments indicate that the appropriate stack height for the proposed Generating Equipment, which will achieve adequate dispersion of flue gas emissions, is between 35 m and 45 m.

Cumulative Effects

There are no other permitted or proposed developments within the study area which may result in air quality impacts during construction, or any other large combustion sources currently or proposed to be in operation.

Conclusion

Given the stack height identified based on air quality modelling, and based on the Preliminary Environmental Assessments, there are not anticipated to be any significant effects on air quality as a result of the Project during construction, operation or decommissioning.

LEGEND



Modelled Sensitive Human Receptors





Noise and Vibration

The construction, operation and decommissioning phases of the Project have the potential to impact upon noise and vibration.

Preliminary Information

A desk based study and baseline noise monitoring were undertaken to establish baseline sound levels at local noise sensitive receptors. The study area has been determined to incorporate the nearest representative Noise Sensitive Receptors (NSRs) in all directions as shown on the figure below. These are all residential dwellings.

The noise environment is characterised by animals, farming activities and distant road traffic during the day, the wind in trees and distant road traffic at night, and noise from the existing Swansea North Substation and Felindre Gas Compressor Station.

The sound levels measured during the baseline noise survey complied with environmental noise limit guidelines from the World Health Organisation (WHO) at all but one receptor. At that receptor, the baseline noise levels are already exceeded without the Project being present.

Construction and Decommissioning

Noise disturbance as a result of construction and decommissioning could arise from activities such as excavation for foundations, delivery of the plant, and excavation of the Gas Connection and Electrical Connection. This will however be a temporary source of noise.

Operation

The effects during the operational phase are limited to the Generating Equipment. Operational noise and vibration effects from the Access Road and the Above Ground Installation are negligible, and therefore have been scoped out of the assessment. The buried Electrical Cable and Gas Pipeline will have no noise impact.

No causes of significant vibration associated with the Project are known; the primary rotating equipment within the generator set will be balanced to a high degree and constantly monitored for any changes in the vibration levels it produces. Therefore further assessment of operational vibration is scoped out of the assessment.

At NSRs 1, 2, 3, 5 and 6 (see figure on the next board) the night time ambient sound levels predicted to be produced by the Generating Equipment were recorded to have minor adverse effects, and therefore not significant. The pre-existing night time baseline noise limit at NSR 4 is already above WHO environmental noise limit guidelines. The ambient night time baseline noise limits for that receptor are unchanged after the addition of the sound from the Generating Equipment. Therefore the impact of the Generating Equipment on the sound environment during the night time period is negligible.

Situation/noise source	Sound pressure level in dBA	Average subjective descriptions
30m from a military jet aircraft take off	140	Painful, intolerable
Pop Concert	105	
Nightclub	100	
Pop concert at mixer desk	98	
Passing heavy goods vehicle at 7m	90	Very Noisy
Ringing alarm clock at 1m	80	
Domestic vacuum cleaner at 3m	70	Noisy
Business office	60	
Normal conversation at 1m	55	
The reading room of the British Museum	35	
Bedroom in a quiet area with the windows shut	30	Very quiet
Remote country location without any identifiable sound	20	
Theoretical threshold of hearing	0	Uncanny silence

Sound levels for common situations

The background noise levels during the daytime at the NSRs is between 39 and 43 dB LA90. The predicted sound from the Generating Equipment plus +3 dB correction for the potential distinctive character of the Equipment is 32 - 38 dB. Therefore the daytime impact of the project on the NSRs is very low.



Noise and Vibration

Proposed Mitigation Measures

A Construction Environmental Management Plan (CEMP) would be adhered to in order to mitigate noise impacts from construction activities. Embedded mitigation in the form of high performance silencers, the acoustic cladding of the gas turbine generator, and the use of inherently quiet plant items will minimise any potential effects of noise during operation.

Conclusion

Provided that the limits identified in the Preliminary Environmental Information Report are met, no likely significant effects are anticipated from noise as a result of the construction, operation and decommissioning of the Project.



Noise Sensitive Receptor (NSR) Locations and Estimated Sound Levels at Night Time.

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Ecology

The construction, operation and decommissioning phases of the proposed Project have the potential to impact upon the local ecology and disturb various sensitive species.

Preliminary information

A desk based study has been undertaken for a 2 km radius for nationally designated sites (Sites of Special Scientific Interest, Sites of Importance for Nature Conservation) and 10 km for internationally designated sites (Ramsar, Special Areas of Conservation, Special Protection Area).

The following ecological surveys have been undertaken to re-establish the ecological baseline since the 2014 Preliminary Environmental Information Report (PEIR):

- Habitat survey;
- Great crested newt survey;
- Reptile survey;
- Otter and water vole survey;
- Dormouse survey;
- Badger survey; and,
- Bat roost assessment and activity survey.

A summary of the results from the Phase 2 protected species surveys on and surrounding the Project Site is provided in the table below.

Species	Results obtained to date		
Badger	Signs of badgers have been recorded in the area during the surveys.		
Bats	At least ten species of bats have been recorded during surveys. No buildings suitable for supporting bats have been identified within the Project Site boundary. A single tree within the Project Site boundary is confirmed as a summer bat roost.		
Breeding Birds	Surveys identified a locally important breeding bird assemblage. Included within the assemblage are nine species of Welsh biodiversity importance, eight that are red-listed for conservation in the UK and eight that are amber-listed for conservation in the UK. During the field surveys no Schedule 1 species were identified as breeding (Schedule 1 birds are afforded additional protection under UK legislation from disturbance during nesting).		
Dormouse	No dormice were identified during any of the field surveys. It is likely dormice are absent from the Project Site and will be scoped out of any further assessment.		
Amphibians	Populations of common toads, palmate newts and/or smooth newts were identified during field surveys. Common toad is a Section 7 species. No great crested newts were recorded during the surveys.		
Otter	It is likely that otters use the suitable watercourses within the otter survey area and Project Site boundary for occasional foraging, commuting, resting and holt creation; although no evidence of holts was identified during the survey.		
Water Vole	No current evidence of water vole was identified during the field surveys and it is likely that water vole are absent from the water vole survey area.		
Reptiles	A 'Good' breeding population of common lizard was identified during the field surveys. It is assumed that grass snake is present based on the results of the 2014 survey.		
Terrestrial and Aquatic Invertebrates	Nationally scarce beetle species were identified during the field surveys. Priority invertebrate (beetle, butterfly and moth) species were identified during the field surveys. The majority of the Section 7 invertebrate species identified are known to be common throughout the region and/or UK.		
Invasive Species	Three invasive species of plant were recorded during the 2017 Phase 1 Habitat Survey. The final design will seek to avoid the locations where these species were recorded where possible. Should this not be possible, suitable mitigation measures will be put in place.		



Ecology

Proposed mitigation measures

Mitigation in relation to ecology will consist of the production of a Construction Environmental Management Plan (CEMP), as well as ecological enhancement measures such as replacement habitats where possible via the Landscape and Reinstatement Plan, pre-construction surveys and production of a Reptile Method Statement.

As a result, no residual significant effects have been identified for habitats or species during the construction, operation or decommissioning of the Project.

Next steps

The following surveys are ongoing and will be undertaken in 2018:

- Hedgerow survey in April 2018;
- Ongoing bat activity surveys in April and May 2018; and
- Breeding bird survey in March / April 2018.

It is also intended to continue liaison with the City and County of Swansea Council and Natural Resources Wales regarding the ecological mitigation required for reptiles and other species present onsite.



Habitat Survey Map

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	Project Site Boundary	
Phase 1 Habitat Linear Features		
XX	Scrub - Scattered	
••	Row of trees - broadleaved	
	Running Water	
—	Intact Hedge - Species-Poor	
	Defunct Hedge - Species-Poor	
₩₩	Hedge with Trees - Native Species-Rich	
++++++	Hedge with Trees - Species-Poor	
\blacksquare	Fence	
••••	Earth Bank	
Phase 1	I Habitat Areas	
	Broadleaved woodland - semi-natural	
	Broadleaved woodland - plantation	
XX	Dense/Continuous scrub	
(X]	Scattered scrub	
CT	Semi-improved - neutral grassland	
II	Improved grassland	
	Marsh/marshy grassland	
\mathbf{N}	Tall ruderal - herb and fern	
	Dry heath/acid grassland mosaic	
	Buildings	
	Bare ground	
	Hard standing	



Water Quality and Resources

The construction, operation and decommissioning of the proposed Project has the potential to impact upon water quality and resources.

Preliminary information

An assessment of the likely significant effects on water quality, water resources and flood risk has been undertaken.

The study area adopted with respect to the water quality and water resources extends beyond the Project Site boundary as shown in the figure below. The study area includes the area within the Project Site boundary and a potential zone of influence (ZoI) which is defined as a distance over which significant effects on important water receptors/features can reasonably have the potential to occur.

A desk study and Project Site walkover has identified a number of receptors (waterbodies) within 1 km of the Project Site, including the Afon Llan and its tributaries, ponds within the Project Site Boundary and several Sites of Importance for Nature Conservation. The Loughor Estuary / Bury Inlet Special Area of Conservation is located 7 km from the Project Site Boundary.

Mitigation Measures

Mitigation measures to reduce the effects on groundwater and surface water features, such as the Afon Llan and its tributaries, will include settlement ponds, directional drilling techniques, careful siting of stockpiles and implementation of Sustainable Drainage Systems.

Construction and Decommissioning

There is a potential negligible effect from discharging water from construction excavations containing increased pollutants (such as hydrocarbons, oils and other hazardous products), and sediment loads from movement of materials, to all identified receptors with the exception of the Loughor Estuary, which was considered to have a minor adverse effect.

Operation

The surface water runoff from impermeable areas, and disruption of water storage and flow from the presence of the Generating Equipment Site on the Afon Llan and its tributaries are predicted to have minor adverse effects. This is therefore not significant.

Conclusion

No significant effects are anticipated on water quality and resources as a result of the Project during construction, operation or decommissioning.





Geology, ground conditions and hydrogeology

The construction, operation and decommissioning of the proposed Project has the potential to impact upon geology, ground conditions and hydrogeology.

Preliminary information

A desk-based assessment and site walkover have been undertaken to characterise the baseline environment of the Project Site to make a preliminary assessment of any potential impacts. The study area for this topic is an area up to 1 km from the Project Site boundary.

The desk-based assessment identified no landfill sites, groundwater abstraction or pollution incidents within the Project Site. The land-use is predominantly agricultural, used for sheep and horse grazing bounded by drainage ditches, fencing and hedgerows.

There are four types of superficial deposits identified across the Project Site comprising of glacial till, deposits of sand and gravel, alluvium deposits of clay, silt, sand and gravel, and peat. The superficial deposits and underlying geology are both classified as Secondary A Aquifers, which are highly sensitive controlled waters.

Within the 1 km study area of the Project Site there are ten records of historical ground working features which have all ceased production. These comprise nine opencast mines producing sandstones, sands and gravel and one underground mine producing coal.

There are no known potential sources of contamination within the Project Site boundary however offsite sources may comprise historic landfill, landfill extension and localised contamination from agricultural land use.

The City and County of Swansea Council records indicate that sand and gravel reserves are present underlying the Project Site.

Construction and Decommissioning

The construction and decommissioning works associated with the Power Generation Plant, such as ground disturbance and potential pollution incidents, will not result in significant effects. The construction of the Gas Connection and Electrical Connection will result in the temporary sterilisation of agricultural land and other potential mineral resources. This will not result in significant effects.

Operation

The operation of the Power Generation Plant, Gas and Electrical Connections is anticipated to have minor adverse effects on geology, ground conditions and hydrogeology. However, where the stability of ground conditions is concerned, operation of the Power Generation Plant will result in a minor beneficial effect.

Proposed Mitigation Measures

All construction work will be conducted within best practice guidelines, and a detailed Construction Environmental Management Plan (CEMP) will be employed to prevent any contamination or pollution incidents impacting on ground conditions. In respect of geology, ground conditions and agriculture, some mitigation could include;

Minimising land take where possible;

- Avoiding the need for piled foundations where possible;
- Dust suppression measures; and
- Following best practice guidance to minimise risk of spillages.

These mitigation measures would be detailed within the CEMP.



Landscape and Visual Impacts

The construction, operation and decommissioning of the Project has the potential to impact upon landscape character and resources, designated landscapes, registered parks and gardens, recreational interests, and visual amenity.

Preliminary Information

The study area for the landscape and visual impact assessment has a radius of 15 km from the Project Site. A Zone of Theoretical Visibility (ZTV) has been prepared to identify the areas from which part(s) of the Project may be visible. This ZTV assumes that the highest part of the Project will be the stack and that the stack will have the maximum possible height of 45 m. The ZTV is shown below. A site visit has also been undertaken to assess any potential impacts upon the landscape.

The Project Site lies within a valley which combined with the existing woodland and undulating topography provides a high degree of visual containment. Views from local roads are screened or filtered by hedgerows and earth banks. Views overlooking the Project Site from higher ground to the north and from more distant views to the south east near to the Gower Area of Outstanding Natural Beauty would not experience significant effects due to the intervening distance, vegetation and built form. Where views of the upper parts of the Generating Equipment are visible in the middle distance of views, they would be seen in the context of the existing network of pylons and transmission lines, which are a similar height to the stack, as well as the tall structures present at the Felindre Gas Compressor Station and Swansea North Substation.

As a result, significant residual effects on the landscape and visual resource are localised and not extensive.

Power Generation Plant

The main visually prominent element of the Power Generation Plant is expected to be the 45 m-high stack. This represents a maximum height out of the possible range of 35 m to a 45 m stack and a 45 m stack has therefore been assessed as this represents the worst case scenario.. This vertical element is expected to have significant adverse effects on viewpoints 9, 14, 15, 16 and 17 (shown on the figure below) during construction and operation, as well as the landscape character of the Project Site. However, the emissions from the stack during operation will not produce a visible plume.

Gas Connection and Electrical Connection

The Gas Connection and Electrical Connection are predominantly underground and are not expected to have significant effects during construction and operation. The reinstatement of the ground above underground infrastructure and screening of above ground infrastructure will be important in mitigating any potentially adverse effects and reducing the potential for residual impacts.

Mitigation Measures

A landscape mitigation strategy has been developed to both provide reinstatement planting as well as to integrate the Project into the landscape and its wider setting and is provided in the Preliminary Environmental Information Report.

Next steps

During the consultation period, Abergelli Power will continue to liaise with the City and County of Swansea Council and Natural Resources Wales regarding potential additional viewpoints for the assessment. In addition, winter photography used for photomontages will be updated and included within the DCO Application.

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Traffic, Transport and Access

The Project has the potential to impact upon the local transport network.

Proposed Access Route Options

In 2014, two possible route options for accessing the Project Site were under consideration. It has now been confirmed that Option B (see figure below) will be used. Option B extends the existing road to National Grid's Swansea North substation, which is accessed via the B4489 to the west of the site.

The route of the new section of Access Road that will lead from the existing National Grid access to the Generating Equipment site is yet to be finalised and two options are under consideration (Options 1 and 2) as shown on the figure below.





Preliminary information

A preliminary assessment of the local road network has been undertaken to identify any potential impacts from the proposed Project. This assessment has taken into account both access route options.

The preliminary assessment of the potential impacts indicates that the construction period would have the largest impact in terms of traffic generation. During this period, there are expected to be slight to moderate increases in car, van and heavy goods vehicle (HGV) traffic levels, and slight disruption to the road network due to abnormal load deliveries and removals (such as large plant and equipment) at offpeak times.

The study area (shown on the next figure) includes the Access Road between the Project Site and the B4489 and continues south to incorporate the M4 Junction 46 and the A48/Pant Lasau Road junction.

This baseline study area was selected to include the necessary junctions, key links, pedestrian routes (PRoWs, cycleways and footways), and Project access routes and these have been agreed with City County of Swansea Council

The key links are as follows:

- Link 1 B4489, between the Access Road and the Felindre Park and Share facility;
- Link 2 B4489, between the Felindre Park and Share facility and the M4 Junction 46;
- Link 3 M4 eastbound on-slip;
- Link 4 A48, between the northern and southern dumbbell roundabouts of the M4 Junction 46;
- Link 5 M4 westbound off-slip;
- Link 6 A48, between the M4 Junction 46 and the A48/Pant Lasau Road mini-roundabout;
- Link 7 Pant Lasau Road;
- Link 8 A48, southeast of the A48/Pant Lasau miniroundabout;
- Link 9 B4489, south of the M4 Junction 46; and
- Link 10 A48, southwest of the M4 Junction 46.



Traffic, Transport and Access

Study Area and Key Links





Construction and Decommissioning

The peak traffic during construction is expected to result in approximately 200 car or van trips per day and around 150 HGV deliveries per day. This assumes a 22-month construction period, with the peak of HGV deliveries occurring during the first three months of the period and the peak of car and van trips occurring during months 13 to 15. The car or van trips would be limited to the start and end of the working day whilst HGV trips would be spread across the day. Decommissioning of the Power Generation Plant is expected to generate a similar or fewer number of vehicle movements.

The majority of the transport links within the assessment will experience minor adverse effects, which are not significant, other than those discussed below.

Effects to Link 1 and the footpaths which cross within the Project Site Boundary are considered to be moderate due to pedestrian and user experience.

There was also found to be an increased delay on B4489 due to the Power Generation Plant which is considered minor adverse.

There was found to be a reduced delay on M4 East Bound and West Bound Off-Slip which is considered to be an impact of minor benefit. This is as a result of changes in the balance of traffic flows at the junction, which will result in more gaps for traffic exiting from these arms as priorities are changed. This will result in a reduction in the level of delay of the arms benefitting from traffic flow balancing and an increase in arms which are forced to concede priority more than before flows were balanced.

Operation of the Power Generation Plant

During the operational period, it is anticipated that approximately three employees would be present on site during each shift. With such minimal operational traffic, the effects are considered to be negligible.

Mitigation

Mitigation to minimise the effects of the construction, operational and decommissioning periods includes:

- A Construction Traffic Management Plan, which could include aspects such as timing the arrival and departure of HGV traffic during off-peak times;
- A Travel Plan to promote the use of sustainable transport among employees and reduce the number of vehicles on the road network; and
- The agreement of abnormal load routing with the highways department of the City and County of Swansea Council and the South Wales Trunk Road Agency.

Next Steps

Investigation is ongoing on the viability of both options for the new Access Road from the Substation to the Generating Equipment Site and therefore both are included within the Project Site boundary provided at this stage. APL intends to gain comments from interested parties and landowners in this regard and confirm the finalised option within the submitted Environmental Statement at DCO Application.



Historic Environment

The construction, operation and decommissioning phases of the Project have the potential to impact upon heritage assets such as archaeological remains and the setting and appreciation of Heritage Assets such as Listed Buildings, Scheduled Monuments, Historic Park and Gardens and any other non-designated structure or building of cultural heritage importance.

Preliminary Information

A preliminary desk-based assessment and site walkover has been undertaken to assess any potential effects upon heritage assets.

A 1 km study area for the desk based assessment of historic assets and consultation with City and County of Swansea Council, Cadw and Glamorgan-Gwent Archaeological Trust (GGAT) has been undertaken to inform the assessment.

The setting assessment has considered designated Heritage Assets within 5 km from the Project Site.

The assessment has found that the Project Site contains no historic assets although one Scheduled Monument, one Listed Building and 28 Non-scheduled Monuments are present within the 1 km study area. Within the 5 km study area for the assessment of setting, there are 16 Scheduled Monuments, 52 Listed Buildings (all grades), two Conservation Areas and three Registered Historic Parks and Gardens.

Construction

Construction of the Power Generation Plant and the Electrical Connection will not have a physical impact on any known historic assets. Therefore the effects during construction of the Power Generation Plant and Electrical Connection are not significant.

Construction of the Gas Connection will not have a significant physical impact on any known historic asset, with the exception of where the Gas Pipeline crosses a small percentage of a historic field boundary, therefore requiring some removal. As this feature was already substantially altered when the preceding Oil Pipeline was installed, it is considered that little of the original historic fabric remains, and therefore the effect is considered to be negligible.

Operation

No below ground disturbance is envisaged during the operational phase for any operational or maintenance activity, therefore there will be no further impact upon below ground archaeological remains once the Project is operational.

The Llansemlet Conservation Area, Penllergaer Park and Garden and several Listed Buildings lie within the 5 km study area for effects on setting. From these locations the stack may be visible. However, given the intervening landscape has been significantly developed, it is not anticipated that the Conservation Area, Park and Garden and Listed Buildings will be adversely affected by the Project.

It is anticipated that Project may be slightly visible from the Scheduled Ancient Monument (Mynydd Pysodlyn Round Barrow) and therefore is considered to have a minor adverse impact.

Mitigation Measures

Potential adverse effects will be limited by implementation of appropriate mitigation measures which will be devised with the relevant statutory consultees, and will likely include an archaeological watching brief to be carried out during construction.

Next Steps

The assessment of the Project's effects on the setting of historic assets is at an interim stage. The DCO Application will include winter photography, as well as additional viewpoints, to inform an updated assessment.

Historic Assets in 1km Study Area





Socio-Economics

The construction, operation and decommissioning phases of the Project have the potential to impact upon the labour market, community facilities and tourism.

Preliminary Information

A desk-based assessment has been undertaken to assess the potential impacts.

Socio-economic Study Area

The socio-economic study area is based on drive time catchment areas from the Project (as shown in the figure below).

- The 'local area' is defined within a 30-minute drive time;
- The 'wider area' within a 45-minute drive time; and
- The 'wider region' within a 60-minute drive time.

The socio-economic study area surrounding the Project is characterised by:

- An increasing population (2001-2017);
- Projected population increase of c.7% between 2017 and 2035;
- Slightly lower levels of unemployment comparable to the UK average;
- A higher proportion of people working in construction and manufacturing jobs;
- Above average levels of employment in electricity and gas related occupations;
- A lower proportion of people working in high value professional, scientific and technical activities, and finance & insurance occupations;
- A higher proportion of people employed in semi-skilled/unskilled jobs and lower proportion of people in highly skilled jobs; and
- A higher proportion of people achieving no qualifications and low level qualifications compared to the UK average.



Tourism/Business Study Area

The tourism/business survey study area is limited to a 10 km radius of the Project. This is where the majority of impacts are anticipated. A desk based study was undertaken that identified a limited number of tourist attractions within the Project Site Boundary, which are:

- The Cwm Clydach Nature Reserve;
- National Cycle Route 43; and
- Teamforce Paintball and Laser Tag Activity Centre.

Community Infrastructure Study Area

An initial audit of community facilities within 5 km of the Project Site indicates the provision of: 18 schools, five GP surgeries; one hospital; six dentists; six pharmacies; one park; and one library. The level of existing community infrastructure is considered to be sufficient to accommodate additional demand.

Conclusions

Results of the preliminary assessment are that the Project will not have any significant adverse effects on tourism and recreation receptors; or on community infrastructure in the area during construction, operation or decommissioning.

Beneficial employment effects can however be enhanced through linkages with job centres, colleges, employability programmes and engagement with local construction firms and other supply chain companies.

Next Steps

We are committed to providing community benefits through the development of Science, Technology, Engineering and Mathematics (STEM) education, provision of skills and training opportunities and supporting a low carbon economy. We will continue to engage with City and County of Swansea Council to discuss options for delivering these through the existing Beyond Bricks and Mortar Scheme.



Need for Flexible Gas Generation

Nearly 45% of the country's power already comes from gas, mostly generated by combined cycle gas turbine (CCGT) power plants. But while CCGT plants can deliver a steady supply of baseload power, they cannot turn on and be at full capacity at very short notice. Starting from cold to quickly power the equivalent of a small city in a matter of minutes rather than hours or days, however, is exactly what the UK power network is increasingly going to need.

Solar and wind power cannot generate electricity when it's dark or still. So to facilitate more of these intermittent renewables coming onto the grid, we need sources that can be quickly ramped up to 'fill the gaps' when lower carbon technologies aren't able to provide the essential power for the modern world. This is where Open Cycle Gas Turbine (OCGT) stations come in, alongside other standby technologies such as storage and demand side response.

OCGT stations have turbines that work like jet engines. This means they can start up incredibly quickly, getting to full load in just 30 minutes, meeting surges quickly when intermittent renewables cannot. They also complement nuclear, biomass and CCGT power stations that are already providing baseload electricity.

- By early next decade all of the UK's coal-fired power stations and some older gas fired plant will have closed due to the EU Industrial Emissions Directive.
- Similarly, a large number of the UK's nuclear power stations will close having already been given large extensions to their predicted lifespan.
- Renewable energy technologies are fundamental to the UK's decarbonisation strategy, however they cannot provide the security of supply that is currently provided by ageing coal-fired, gas-fired and nuclear plants.
- The future for new nuclear power stations in the UK is uncertain and no new plant are expected to be operational until late next decade.
- Carbon Capture and Storage remains an unproven technology with no plants expected to be available in the foreseeable future.

Government Policy

The overarching National Policy Statement (NPS) for Energy is NPS EN-1, which sets out national policy and explains the need for energy infrastructure.

NPS EN-1 re-affirms the transitional role of new gas-fired generation. It confirms that a diverse energy mix is required and that there is a significant need for new energy generation infrastructure to replace capacity that will be lost through the closure of large existing plants. Such government policies highlight the general need for new gas-fired generation and projects like our own.





Daily generation mix during 2016





About Drax Group

Drax Group plc is a British owned and operated energy company headquartered in North Yorkshire that generates seven per cent of the country's electricity. We employ around 2,300 people and support over 18,500 jobs across our UK supply chain.



We are involved in three principal activities:

- Generating electricity in power stations;
- Supplying electricity and gas to British businesses; and
- Manufacturing sustainable wood pellets for use in electricity production.

The Abergelli Power project is an important part of our strategy to build a flexible, reliable and affordable energy system that can complement the increasing amount of weather dependent wind and solar power generation.

We are experts in building and operating power stations. Drax Power Station, the largest in the country, has been providing electricity to the national grid since the 1970s. In recent years the power station has been upgraded, on-time and on-budget, to use compressed wood pellets instead of coal, making it Europe's largest decarbonisation project and the country's single largest source of renewable power.

We know from experience that energy companies play an important role in the areas in which they operate. We aim to make a real, positive difference to the lives of the people living and working in our

communities. We promise to work hard to ensure we're being a responsible neighbour.

