

16.0 SUMMARY

Introduction

- 16.1 This chapter of the ES summarises the findings of the technical assessments undertaken and concludes the ES.

Ecology and Nature Conservation

- 16.2 Effects on all statutory and non-statutory wildlife sites during the construction phase of the Development are considered to be negligible due to their relative distance from the Site and lack of habitat connectivity.
- 16.3 A number of mitigation measures will be implemented during the construction phase to protect habitats and species, including the establishment of root protection zones around trees and sensitive timing of vegetation clearance. However, the assessment has found that there will be a temporary minor adverse effect from the loss of breeding bird habitat.
- 16.4 With appropriate mitigation, effects on all other species considered in the assessment from the construction of the Development will be negligible.
- 16.5 Effects from the operation of the Development on all statutory and non-statutory wildlife sites, species and habitats are considered to be negligible.
- 16.6 Effects from decommissioning and restoration on all statutory and non-statutory wildlife sites, species and habitats are also considered to be negligible, with the exception of effects on the availability of habitat for foraging and commuting bats which is considered to be minor beneficial.

Landscape & Visual Effects

- 16.7 Receptors at residential properties and those utilising PRoW will, at most, experience a major adverse effect during the construction phase (one residential receptor and six PRoW receptors will experience major adverse effects). Receptors on transport routes will, at most, experience a moderate adverse effect. These effects will be short term and temporary in nature.
- 16.8 It is considered that the Development will not change the character of the existing EMS Well Site as it has been a feature in the landscape since 2008 and has planning permission for

natural gas production. The temporary loss of features and introduction of plant and machinery will result in a moderate adverse effect during construction on landscape features and landscape character.

- 16.9 The North York Moors National Park will be adversely affected by the Development due to the introduction of plant and machinery into the landscape which is uncharacteristic of the area, and the removal of landscape features and temporary change in land use. However, these alterations will not be perceived over a wide area, therefore a short-term minor adverse effect will occur during the construction phase.
- 16.10 Once operational the Development will only be perceived at a local level, and at most, a minor adverse effect will arise on landscape features and landscape character. This will reduce over time to a negligible effect as replacement vegetation matures. The effect from the operation of the Development on the North York Moors National Park will be negligible.
- 16.11 Receptors at residential properties will, at most, experience a minor adverse effect during year 1 of operation, which will reduce over time as replacement vegetation matures. Receptors using the PRow network in and around the Site will, at most, experience a moderate adverse effect during year 1 of operation, which will reduce to at most a minor adverse effect during year 15 as reinstated vegetation begins to reach maturity. The transport routes in and around the Site will, at most, experience a minor adverse effect during year 1 of operation, which will reduce over time as replacement vegetation matures.
- 16.12 During the decommissioning phase minor adverse effects will occur with respect to landscape character and visual receptors in and around the EMS Well Site. Following the implementation of the restoration proposals, in combination with the continuing maturation of the planting associated with the operational phase and restoration phase, the significance of effects will be minor beneficial in and around the EMS Well Site. Where the pipeline remains in-situ the significance of effect will remain the same as in Year 15 of operation.

Traffic and Transportation

- 16.13 The greatest effect of the Development is anticipated to be during the construction phase. However, with mitigation in place including routing of construction traffic to suitable roads and imposing traffic control measures, effects are considered to be temporary and range from negligible to minor adverse, with the exception of Malton Lane/Wilton Ings Lane where there is likely to be a temporary moderate adverse effect on driver delay as traffic will need to be temporarily diverted.

- 16.14 With temporary diversions in place, residual effects on footpaths crossing the pipeline corridor will be negligible.
- 16.15 The effect of the completed Development is considered to be negligible. The Development will generate very few trips (with the majority to the EMS Well Site) and these can be easily accommodated within the existing road network.
- 16.16 Decommissioning will have a residual minor adverse effect on Ebberston Lane for the short term duration of the works that will cease upon completion of the decommissioning.

Noise and Vibration

- 16.17 The assessment has found that construction noise will be of minor adverse significance at a few locations for very limited periods of time. In the worst case for pipeline construction, there will be periods of a few days at the affected locations where daytime noise levels are elevated, but this will never occur never at levels that would be regarded as significant according to the World Health Organisation (WHO) Guidance.
- 16.18 Drilling noise from the EMS Well Site will be of temporary minor adverse significance at just two properties, and these levels will prevail for periods of no more than a few weeks at a time. Vibration effects from the construction of Development will be negligible.
- 16.19 Noise and vibration effects from the operation of the Development will be negligible.
- 16.20 The levels of noise arising during decommissioning (dismantling and removal of plant) and site restoration (primarily earthworks) at the EMS Well Site will at worst be no greater than those arising during site construction. The effect on the amenity of local residents is anticipated to be negligible.

Air Quality

- 16.21 During the construction phase, the effects on air quality associated with traffic are considered to be negligible, due to the relatively small number of vehicles required to construct the Development.
- 16.22 Due to the distance of activities from sensitive receptors and through good site practice and the implementation of suitable mitigation measures through the Construction Environmental Management Plan (CEMP) the effect of dust will be effectively mitigated resulting in a negligible effect on air quality.

- 16.23 During the operational phase, the effects associated with traffic are considered to be negligible, due to the small number of vehicles required to operate the Development. Operational air quality effects associated with small combustion sources at the EMS Well Site are also considered to be negligible, due to the small amounts of gas that will be combusted on-site and through the use of Best Available Technology (BAT) will be utilised on-site to manage emissions.
- 16.24 Odour is also considered unlikely to be a significant issue as only small volumes of gas are to be combusted at the EMS Well Site. This will be confirmed in a Draft Odour Management Plan (OMP) which will be prepared for consultation with the relevant stakeholders prior to Construction.
- 16.25 As with the construction phase, with appropriate mitigation, all effects from the decommissioning of the Development on air quality are considered to be negligible.

Flood Risk, Hydrology and Drainage

- 16.26 The presence of the impermeable covering under the EMS Well Site combined with good working practices along the pipeline route to be implemented through the CEMP will ensure that the effects of construction activities on flood risk, hydrology and drainage are reduced to negligible.
- 16.27 There will be regular monitoring of the pipeline to ensure that there are no leaks that could potentially affect ground or surface water. As a result effects of the operation of the Development on flood risk, hydrology and drainage will be negligible.
- 16.28 Decommissioning and restoration will have minor-moderate beneficial effects.

Produced Water Disposal

- 16.29 During construction, measures will be put in place through use of best available technology and best practice to minimise potential for contamination of water supplies which would result in a negligible effect on groundwater during construction.
- 16.30 During operation, the injection of water will not affect groundwater used for drinking water or other uses. Therefore, there will be negligible effect as a result of injecting produced water into the Sherwood Sandstone.

- 16.31 During the life of the injection well(s), the injection pressure will always be maintained below the material strength of the Sherwood Sandstone formation and, therefore, below the pressure required to fracture or displace the rock. There is consequently a negligible risk of induced seismicity as a result of produced water injection.
- 16.32 There will be negligible effects during decommissioning and restoration once gas production has ceased with appropriate sealing of the wells and removal of potential contaminants from the Site.

Cultural Heritage

- 16.33 There will be no direct effect on buried cultural heritage resources at the EMS Well Site. With suitable mitigation including a programme of archaeological monitoring and recording, trial trenching and suitable installation techniques to carry the pipeline beneath the Scheduled Monuments along the pipeline corridor residual effects on archaeology along the pipeline route will be moderate beneficial.
- 16.34 In terms of indirect effects, during the construction phase the Development will have a minor adverse effect on the setting and visual integrity of the nearby Scheduled Monuments. These include barrows to the west of the EMS Well Site, a pit alignment on Givendale Rigg and a further barrow northeast of Warren House. There will be negligible effects on the two listed buildings due to intervening hedgerows and other vegetation.
- 16.35 When the Development is operational there will be no direct effects on any cultural heritage resources. The operation of the EMS Well Site will have an indirect impact on the nearby Scheduled prehistoric barrows. The effect is considered to be minor adverse and reversible (when the Development is decommissioned).
- 16.36 The decommissioning and restoration phase of the Development will have no direct effect on cultural heritage resources. The pipeline will be left in place, meaning there will be no effect on the setting of the nearby cultural heritage resources, but the decommissioning of the EMS Well Site will remove the visual impact it would have on nearby heritage resources. Therefore, the demolition and restoration phase of the EMS Well Site will have an overall moderate beneficial effect on the settings and visual integrity of cultural heritage resources in the vicinity.

Economics

- 16.37 The introduction of approximately 50 direct jobs and the spin-off indirect employment and boost to local economy) is considered to have a short-term, temporary, minor beneficial effect on employment during the construction phase and a negligible effect on population.
- 16.38 The Development will assist in meeting future demand and secure energy supplies in the UK by the production of gas to be used as fuel-gas to generate power at KGS for up to 15 years which is considered to be major beneficial. In addition the operation of the Development will create three jobs for the Applicant's employees relating to the management of operations at the Site and site management and will help safeguard the employment of the 23 existing employees at KGS which is considered to be a moderate to minor beneficial effect.
- 16.39 It is anticipated that the decommissioning and restoration phase of the Development will employ up to ten workers. Overall, there will be negligible effect on population and a temporary minor beneficial effect on employment during decommissioning and restoration.

Ground Conditions

- 16.40 Mitigation measures will ensure that any risk from hydrocarbon contamination is reduced to negligible during the construction of the Development.
- 16.41 Design measures and geotechnical investigation will ensure that the potential for ground collapse to occur as a result of the excavations during construction or the potential for running sands or landslides to cause collapse of the pipeline trench during construction will be controlled. Therefore, the residual effects for the running sand hazard is considered to be negligible and landslide hazard is considered to be minor adverse.
- 16.42 As with the construction phase mitigation measures will ensure that the residual effects from the risk of hydrocarbon contamination and from minor spills of waste from the operation and decommissioning of the Development will be negligible.

Interactive Effects

- 16.43 The greatest likelihood of interaction effects would occur during the construction phase.
- 16.44 Following a review of the assessments undertaken as part of this ES and information on the proposed construction methodology and programme, it is considered that the majority of

interactions would arise from a combination of construction noise and adverse visual amenity effects. All effect interactions would be temporary and generally restricted to relatively short periods.

- 16.45 As discussed above and within Chapter 6, a CEMP will be prepared and implemented before construction commences. The CEMP will set out appropriate methods for managing environmental issues to eliminate, reduce or offset adverse interactive environmental effects on surrounding receptors.