

16 SUMMARY OF COMPARISON BETWEEN THE LIKELY SIGNIFICANT EFFECTS OF THE CONSENTED DEVELOPMENT AND PROPOSED DEVELOPMENT

16.1 INTRODUCTION

This ES is required to present the main respects in which it is considered that the likely significant effects on the environment of the Proposed Development would differ from those described in the Environmental Assessment (EA) that was prepared for the Consented Development. This chapter presents a summary of the findings of the comparisons made for each of the technical topics as presented in more detail at the end of each of *Chapters 6 to 13*.

16.2 LAND AND WATER

16.2.1 Discharges to Water

Discharges to water were assessed in the EA for the Consented Development in terms of compliance with regulatory requirements at the time (effects on ecology were also considered and are addressed in this ES under 'Ecology'). Although not explicitly stated a 'not significant' conclusion is assumed.

Discharges to water from the Proposed Development will also be in accordance with regulatory requirements and will lead to no significant effects.

The conclusions on likely significant effects from water discharges can be considered the same for both the EA of the Consented Development and the present EIA for the Proposed Development.

16.2.2 Abstraction of Water

The effects of cooling water abstraction from the Stainforth and Keadby Canal were not assessed in the EA for the Consented Development (other than for effects on ecology).

The effects on water availability of cooling water abstraction from the Stainforth and Keadby Canal for the Proposed Development have been assessed as not significant.

In as much as the Consented Development and the Proposed Development both have similar volume demands for cooling water it is reasonable to conclude that the abstraction effects for both would be broadly similar and not significant.

16.2.3 Flood Risk

There was no requirement to assess flood risk for the Consented Development.

The EIA of the Proposed Development has demonstrated a safe level for the development platform and the site will be raised to this level.

In as much as the Consented Development and the Proposed Development both have similar land area demands it is reasonable to conclude that the flood risk considerations (mitigated as necessary) for both would be broadly similar and not significant.

16.3 ***ECOLOGY***

16.3.1 ***Landtake and Construction Effects on Habitats, Flora and Fauna***

The EA of the Consented Development concluded that the construction and operation of the project would have no impacts on habitats flora and fauna.

The EIA of the Proposed Development concludes that construction and operation of the project will not result in significant effects on habitats, flora and fauna, given the habitats that will be affected.

16.3.2 ***Effects on Ecological Receptors from Emissions to Air***

The EA of the Consented Development concluded that the operation of the project would increase local concentrations of NO_x and SO₂, but did not assess the impacts of these increases on sensitive ecological receptors.

The EIA of the Proposed Development concludes that its operation would result in smaller air quality impacts than the Consented Development for all but three nearby non-statutory designated sites where the Proposed Development will result in a slight increase in 24 hour exposure to NO_x levels. Mitigation is proposed to reduce the effect to not significant. Overall the assessment concluded effects on ecological receptors would be not significant.

16.3.3 ***Effects on Aquatic Ecology***

The EA of the Consented Development concluded that the abstraction of cooling water would result in the mortality of biota drawn through intake screens, but that the losses would not be significant. It also concluded that the discharge of cooling water would have no effect on ecology.

The EIA of the Proposed Development concludes that the use of screens on any water intake would reduce the effects on adult eels and lamprey being entrained. Eels are known to be more susceptible to effects than lamprey, and minor significant effects on the eel population are predicted. However, it is reasonable to conclude that if the EA of the Consented Development had also considered effects on eels (in accordance with the Eels (England and Wales) Regulations 2009) a similar conclusion would have been reached.

16.3.4 Habitats Regulations Assessment

The EA of the Consented Development was undertaken prior to the passing of the EC Habitats Directive or its enacting legislation, therefore European designated sites were not considered.

The EIA of the Proposed Development is supported by a separate report containing Information to Inform Habitat Regulations Assessment. The report suggests that the Proposed Development will not adversely affect the integrity of any of the European designated sites when considered either alone or in combination with other projects.

16.4 NOISE

16.4.1 Construction Activity on Site

The EA for the Consented Development concludes that only rarely would construction noise levels approach the assessment criterion and so it is assumed effects could be assessed as not significant.

The EIA for the Proposed Development concludes that construction noise levels are within the daytime assessment criteria. Limitations will be required on the nature of works undertaken at night. Effects are assessed as not significant.

16.4.2 Construction Traffic

The EA for the Consented Development did not specifically assess noise from construction traffic but the numbers of movement were in the same order as for the Proposed Development.

The assessment of construction traffic noise for the Proposed Development concludes there will be no significant effects on roadside receptors.

In as much as the Consented Development and the Proposed Development both have similar construction traffic volumes it is reasonable to conclude that effects for both would be broadly similar and not significant.

16.4.3 Operational Noise

For the Consented Development noise was assessed in terms of compliance with a suggested consent condition that would be based in part on that for Keadby I, taking account of the presence of Keadby I in the noise baseline.

For the Proposed Development noise levels have been assessed against current criteria and the assessment concludes that operational noise will not lead to significant effects on people at the nearest sensitive receptors.

In as much as the Consented Development and the Proposed Development noise effects at receptors can be compared it is reasonable to conclude that effects for both would be broadly similar and not significant. However it is worth noting that the Proposed Development will benefit from noise

attenuation (e.g. designed in to the cooling towers) that may not have been available to the Consented Development and as a result the noise levels predicted for the Proposed Development are lower than the noise limits set in the planning consents for the Consented Development.

16.5 AIR QUALITY

16.5.1 Atmospheric Emissions: Human Health

In order to make a comparison this EIA assessed the impacts on air quality of both the Consented Development and the Proposed Development through use of a current atmospheric dispersion model. Using current assessment criteria and a worst case approach, short and long-term effects of moderate significance are predicted for both the Consented Development and the Proposed Development (either layout option) together with Keadby I. In all instances predicted concentrations of pollutants are within the standards designed to protect human health. It can be concluded there would be no difference in likely significant effects between the Consented and Proposed Development.

16.5.2 Atmospheric Emissions: Ecological Receptors

With the exception of short-term ambient NO_x concentration at three locally designated nature conservation sites, atmospheric dispersion modelling demonstrates smaller impacts (airborne NO_x, nutrient nitrogen and acid deposition) on designated sites from atmospheric emissions from the Proposed Development than for the Consented Development. Overall it can be concluded there would be no difference in likely significant effects between the Consented and Proposed Development.

16.6 CULTURAL HERITAGE

16.6.1 Direct Effects on Archaeology and Cultural Heritage

The EA for the Consented Development stated that there would be no features of archaeological value affected and it can be assumed this led to a conclusion of no likely significant effects.

This EIA for the Proposed Development concludes that although there is potential in the western part of the site for impacts on buried remains of archaeological and/or paleoenvironmental significance, with mitigation in place the effects will be not significant.

16.6.2 Effects on Setting of Heritage Assets

Although they were not specifically assessed at the time the effects on setting of cultural heritage effects will be very similar to those for both the Consented Development and Proposed Development. For the Proposed Development these effects were assessed as not significant.

16.7 **TRAFFIC AND TRANSPORT**

16.7.1 **General Construction Traffic**

The EA of the Consented Development concluded that the surrounding highway network would be able to accommodate the additional 180 construction workers' car movements (150 from the construction of the Consented Development and 30 for the operation of Keadby I) without undue disturbance to local residents.

The EIA of the Proposed Development concludes that construction staff traffic will occur outside the network peak hour, when there is considerable spare capacity to accommodate the increase of up to 133 vehicles at the start and end of the day shift.

16.7.2 **Construction HGVs**

The EA of the Consented Development assumed passage of HGVs via the village of Ealand and thence along private road to the site as was used for large volumes of traffic involved in the demolition of the Keadby coal-fired power station. The implication from this assessment was that the lesser volumes of traffic for the Consented Development would be acceptable. Subsequently, on the basis of concerns expressed by the Secretary of State in the consent letter (10th September 1993) over road safety, consent conditions for a new access road were set (Conditions 4 and 5) and relating to HGV access routes (Conditions 6 and 7).

The Traffic Assessment for the Proposed Development is based on specified HGV routes and use of the new access road which was constructed in accordance with the consent conditions for the Consented Development. The assessment concludes that there will be moderate adverse environmental impact on the A18 and A161 for one hour each day, resulting from an increase of greater than 30% in HGV movements. This is due to a low background flow of HGVs, rather than a large absolute increase in these vehicles. A similar conclusion would have been likely from applying the same assessment criteria to the Consented Development. No significant effects on local communities and residents are predicted.

16.7.3 **Construction Special Loads**

Special (or abnormal) loads were assessed in the EA for the Consented Development in terms of a feasible route into the site and reference was made to the need for Department of Transport approval.

Special loads have been assessed for the Proposed Development in terms of establishing the feasibility of routing them into the site. Some mitigation may be required dependent on the final plant solution selected and the specific trailers required to facilitate the movement.

16.7.4 **Operational Traffic**

The EA of the Consented Development concluded that operational traffic would have no impacts on the residents of Keadby. It is assumed that this

conclusion would apply in regard to other residents and communities locally and further afield.

The EIA for the Proposed Development assesses operational traffic as leading to negligible changes to existing flows and therefore requiring no further consideration under the assessment criteria used.

16.8 SOCIO-ECONOMIC CHARACTERISTICS

16.8.1 Adverse Socio-economic Effects

No significant adverse effects on socio-economic characteristics were identified for the Consented Development and none have been identified for the Proposed Development.

16.8.2 Socio-economic Benefits: Jobs

The socio-economic benefits will be very similar to those for the Consented Development. Although employment generation during construction will be higher for the Proposed Development, employment generation during operation may be similar to, or less than, the Consented Development, depending upon whether Keadby I is operational alongside the Proposed Development or not.

16.8.3 Socio-economic Benefits: Local Economy

Although the local economy context has changed since the early to mid-1990s, the local economic benefits from such matters as the multiplier effect are broadly the same for both the Consented Development and Proposed Development

16.9 LANDSCAPE AND VISUAL

16.9.1 Landscape Effects

The EA for the Consented Development considered effects on landscape but did not conclude any significant effects.

The landscape setting for the Proposed Development has changed from that for the Consented Development in terms of the introduction of wind turbines in the intervening period. In addition, the approach to assessing effects on landscape has also progressed. However, even when taking both these factors into consideration it is reasonable to conclude that there will be no material difference between the Proposed and Consented Development in terms of effects on landscape.

16.9.2 Visual Effects

By virtue of having one versus four stacks and fewer buildings overall, both the single-shaft and multi-shaft options for the Proposed Development will have a smaller magnitude of change in the majority of views than the

Consented Development. Although the EA for the Consented Development did not present conclusions on significance of effects, in terms of overall significance of effects these are likely to be the same for both Proposed and Consented Development.

16.10

CONCLUSIONS

Having compared the findings, and taking account of changes in the baseline and assessment methodologies in the intervening time period, it is concluded that in regard to their likely significant effects the Consented and Proposed Development are broadly comparable. It is worth noting that in certain areas the Proposed Development has a better environmental performance than the Consented Development, reflecting improvements in technology and design. However such differences are not sufficient to alter assessment findings, e.g. in terms of reducing an effect of moderate significance to one of minor significance.