

Comments on REP6-030 -Permanent Sealing of land page 27

1.1 Applicant's reply

The IEMA guidance "A New Perspective on Land and Soil in Environment Impact Assessment" significance criteria in Table 3 refers to "permanent, irreversible loss..." on each occasion, for the assessment of soil impacts. It does not simply refer to permanent loss. The Applicant does not consider the impacts of the proposed development to be permanent and irreversible. The FDEMP and FSMP include provisions for the removal of the infrastructure during decommissioning and the restoration of the soil to its current condition. The impact is therefore neither permanent nor irreversible.

1.2 Comments in response

1.2.1 Throughout the examination stage, the Applicant has sought to distinguish the proposed development from other solar NSIPs, where the areas of hard infrastructure were deemed to be permanently sealed. It has sought to differentiate these NSIPs on the basis that:-

- they do not align with current best practice
- the areas of hardstanding were not intended to be removed on decommissioning
- the areas of hardstanding were sited on Grade 1 and Grade 2 agricultural land which are more difficult to reinstate
- in the case of Mallard Pass, the proposal was originally for a consent that was not time limited and the assessment was not re-visited when a time limit was introduced.

1.2.2 In response, I have submitted that there are recent examples eg in Beacon Fen, Heckington Fen and Springwell where the hard infrastructure was to be removed on decommissioning, the areas of hard infrastructure were not on Grade 1 or Grade 2 agricultural land, the consents were time limited and the land was considered to be permanently sealed (REP6-042 paragraph 1.2 refers).

1.2.3 In REP6-030 page 74 the Applicant has repeated its submissions in REP5A-038 that it is unaware whether the Springwell applicant made any commitments to return soils to its current state or if there were reasons that this could not be achieved; and that 14ha of the land was Grade 1 and Grade 2 on which solar PV was to be sited with the potential for crushed gravel access tracks and impermeable concrete pad foundations on which solar stations will be sited; that it is more difficult to reinstate Grades 1 and 2 land back to their current condition.

1.2.4 I have dealt with this point in paragraph 1.2.3 of REP6-042. Paragraphs 11.8.23 and 11.8.24 of Chapter 11 Land, Soil and Groundwater (REP1-014) of Springwell state that all infrastructure will be removed on decommissioning and that it was intended that the land would be restored to its current condition. Table 11-12 of REP1-014 Springwell sets out the

ALC grading of land for the various areas of the proposed development, details of which are extracted in the table below:-

ALC Grade	Satellite Collector Compounds (ha)	Substation and Main Collector Compound (ha)	BESS (ha)	Solar PV development (ha)	Total (ha)
2	-	-	-	14.3	14.3
3a	1.5	6.9	12.6	-	21
3b	1.5	8.6	0.9	-	11

The ALC areas are shown overlaid with the areas of solar PV development on Figure 11.2 (APP-067 Springwell). This shows 5 small areas of proposed solar PV development totalling 14.3 ha on Grade 2 land, comprising the area of land referred to in the table above. REP1-005 of the Springwell ES is the illustrative layout plans for the proposed development which includes the position of the internal access tracks and inverter and transformer stations within the solar PV fields. Of the 5 areas of solar PV development on Grade 2 land, only one of these areas is shown with an access track to the east of the field and an inverter and transformer station (Sheets 3 and 4 of REP1-005). This represents a very small proportion of the 14.3 ha of solar PV development on Grade 2 land.

1.2.5 The ExA's recommendation report in dealing with the issue of permanent sealing at Springwell specifically did not comment on the impact of the access tracks and inverter/transformer stations on soils within the solar PV arrays. Instead, the ExA discussed the 21ha of Grade 3a BMV land on which the satellite collector compounds, BESS and substation and main collector compound were sited. At paragraph 8.4.16 the ExA stated:-

"In terms of the consideration of land under the proposed larger components of infrastructure such as the satellite collector compounds, BESS, Springwell substation and main collector compounds, the ExA considers that soil compaction under large areas of hardstanding could result in long term effects on soil quality. On this basis, the ExA considers this does raise questions on the ability to return this land back to its previous ALC classification of BMV land, certainly within a timely fashion. Taking a precautionary approach, the ExA considers this should be considered a permanent loss as suggested by NKDC".

At paragraph 8.4.18 the EXA said that this would lead to the permanent loss of 21ha when taking a precautionary approach to land under large areas of hardstanding. The ExA's report therefore only deals with the question of permanent sealing of the 21ha of Grade 3a land under the larger areas of hardstanding and makes no mention of the very small amount of Grade 2 land on which one access track and one inverter station is proposed to be sited. The Applicant's comments about the impact on these areas is therefore irrelevant to the reasoning in the Springwell decision about permanent sealing.

1.2.6 As the reasons put forward by the Applicant to distinguish the proposed development from Springwell (or the other recently decided NSIPS at Beacon Fen and Heckington Fen) in relation to the issue of permanent sealing do not stand up to scrutiny, the Applicant has

turned its attention to the IEMA 2022 Guidance. It refers to Table 3 of the guidance on the assessment of the magnitude of impact on soil resources and soil function and seeks to suggest that the “permanent, irreversible loss” referred to does not apply to the proposed development as the hard infrastructure is to be removed on decommissioning after 60 years and the soils returned to their current ALC grade.

1.2.7 Section 6 of the IEMA Guidance sets out that soil functions are to support biomass production, biodiversity, the carbon, nitrogen and hydrological cycles and the preservation of cultural artefacts; that healthy soil performs multiple functions which are threatened by inter alia soil sealing ie covering the soil with an impermeable material. Table 3 of the guidance sets out the magnitude of impact to soil functions from proposed land use. These range from major to negligible with a major impact being the “Permanent, irreversible loss of one or more soil functions or soil volumes (including permanent sealing or land quality downgrading) over an area of more than 20 ha...”.

1.2.8 The IEMA Guidelines (page 28) states that land-take for hard development, defined as land where natural soils have been displaced or sealed (covered) by built structures and manufactured impermeable surfaces), is considered a permanent land use change. Although the application is for a 60 years time limited “temporary” consent, the Applicant acknowledges that after the operational period, “the condition of the equipment will be reviewed to determine whether it remains in viable condition to continue operation after that time. Should the proposed development be judged to be viable to continue operating at this point additional consents ...would be required”. It is therefore highly unlikely that once built structures have covered these areas of the proposed development, they would be restored to agricultural use.

1.2.9 Whether or not the sealing of land could be reversed is a matter in respect of which the European Environment Agency have published papers on their website. In R Baritz *et al* 2025 “Soil sealing and restoration” the authors say that “soil sealing is the covering of soil with completely or partially impermeable material. It includes the destruction or covering of soil by building or other construction and layers of impermeable artificial material (asphalt, concrete etc). Sealed land is a subset of land take and represents the most intense form of land take; it is essentially irreversible”. In EEA Report No 08/2022 “Soil monitoring in Europe -Indicators and thresholds for soil health assessments” Chapter 9 states “Soil sealing is the destruction or covering of the soil by an impermeable material, this corresponds to an irreversible loss of soil and it’s biological functions and a loss of biodiversity”.

1.2.10 The conclusion is that the sealing of land for the construction of hard infrastructure within the proposed development is both permanent and irreversible. This is reinforced by comments on permanent sealing in the recent solar NSIP decisions of Springwell, Beacon Fen and Heckington Fen.

1.2.11 One of the difficulties of applying the IEMA guidance in making any assessment about the level of magnitude of impact to soil from the areas of hard infrastructure within the proposed development is that the Applicant has failed to provide information about the area and ALC grading of land that potentially might be affected. In my submission at REP3A-

037 (paragraph 3.2) I set out that the following areas of hard infrastructure that would be sealed based on information provided during the examination:-

- **9 ha** of 100 solar stations (0.09 ha each Table 3-3 Chapter 3 REP1-015).
- **6.82 ha** BESS compound. This figure is taken from the Applicant's Response to Written Representations at Deadline 1 -North Kesteven District Council (REP2-030) Scheme Design page 119.
- **1.63 ha** Onsite substation (155m x 105 m). These measurements are taken from paragraph 3.3.49 of Chapter 3 REP1-015.
- **5.7 ha** Access Tracks. This figure is taken from the table as part of the Applicant's Response to Written Representations at Deadline 1-North Kesteven District Council (REP2-030) Scheme Design page 119.
- The impermeable swales constructed on three sides of each of the 100 Solar Station Compounds as set out in the Framework Surface Water Drainage Strategy (REP3-014) and illustrated on the plan at Annex C to the strategy. The swales will be 6m wide, the total area across the principal site has not been stated. There will also be a lined impermeable sustainable drainage system and attenuation swale in connection with the centralised BESS (paragraph 4.5.5 of the FBSMP (REP6-020).

The Applicant has not confirmed the total area of land including the swales that potentially could be deemed to be sealed over nor the ALC grading of this land.