



Upton House
Market Street
Charlbury
Oxfordshire, OX7 3PJ
United Kingdom
tel +44 (0)1608 810374
fax +44 (0)1608 810093
e-mail info@gwp.uk.com
www.gwp.uk.com

**FLOOD RISK RELATED COMMENTS ON DEADLINE 3
SUBMISSIONS IN RESPECT OF SCOTTISH POWER
RENEWABLES EA1N AND EA2 PROJECT ONSHORE
WORKS NEAR FRISTON**

**For
SASES**

January 2021

Report Title: Flood Risk Related Comments on Deadline 3 Submissions in Respect of Scottish Power Renewables EA1N and EA2 Project Onshore Works near Friston

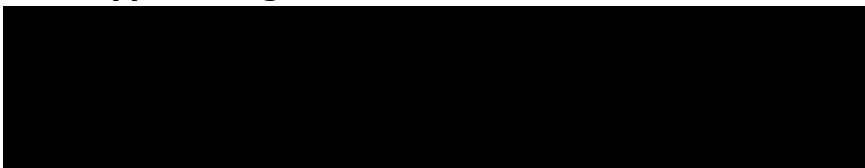
Client: SASES

Job: SASESFRA
Report Number: 210110
Version: v.02
Issue Status: Draft
Prepared by: Clive Carpenter
Issue Date: 12th January 2021

Issue History:

Issue No	Date	Description	Admin Review	Technical Review	Approver
v.01	110121	Draft for Client Approval	GM	JS	CC
v.02	120121	Final	GM	JS	CC

Approver Signature:



This document is based on GWP report template v.1.08 and Normal template v3.10 17/04/19

This report has been prepared by GWP Consultants LLP (GWP) on the specific instructions of our Client. It is solely for our Client's use for the purpose for which it is intended in accordance with the agreed scope of work. Any use or reliance by any person contrary to the above, to which GWP has not given its prior written consent, is at that person's own risk and may be an infringement of GWP's copyright. Furthermore the report is issued on the understanding that GWP's general terms and conditions of engagement are accepted, copies of which are available on request.

CONTENTS

1.	INTRODUCTION	1
2.	COMMENTS ON SUFFOLK COUNTY COUNCIL DEADLINE 3 SUBMISSIONS	1
3.	COMMENTS ON SPR DEADLINE 3 SUBMISSIONS	2
3.1	SPR Outline Operational Drainage Management Plan.....	2
3.2	SPR Outline Code of Construction Practice	3
3.3	SPR Comments on SASES Deadline 1 Submissions	3

FLOOD RISK RELATED COMMENTS ON DEADLINE 3 SUBMISSIONS IN RESPECT OF SCOTTISH POWER RENEWABLES EA1N AND EA2 PROJECT ONSHORE WORKS NEAR FRISTON

1. INTRODUCTION

GWP Consultants has been commissioned by SASES to undertake an independent review of the Deadline 3 submissions with respect to flood risk, forming part of the DCO process for the SPR application for on-shore power generation infrastructure near the village of Friston.

As has been stated in previous technical reviews, the flood risk issue of relevance to Friston Village is primarily associated with storm rainfall run-off (pluvial) flood risk, with a secondary generic concern about groundwater flood risk.

Of the documents reviewed most relate to the Applicants' responses to third party submissions, one is a technical submission by the Applicant on the Outline Operational Drainage Management Plan and another on the Construction Code of Practice, and there are two submissions by SCC as the Lead Local Flood Authority. There were no relevant submissions by the Environment Agency or East Suffolk Council.

2. COMMENTS ON SUFFOLK COUNTY COUNCIL DEADLINE 3 SUBMISSIONS

SCC submitted two documents of relevance to flood risk at Friston: the ISH2 Summary of SCC Oral Case; and Comments by SCC as the Lead Local Flood Authority.

The SCC Summary of ISH2 Oral Case states the SCC concerns on adequacy of sizing of the infiltration basins, necessitating a separate D3 submission on this issue.

The SCC separate document is a 15 page assessment entirely dedicated to raising concerns about flood risk in the Applicant's D3 submission. It is highly critical of the Applicant's approach to assessing flood risk impact and mitigating it.

SCC raise the following critical points about the Applicants' SUDS Infiltration Note:

- The Applicant's drainage scheme does not include infiltration;
- The Applicant has not demonstrated an infiltration rate of 10mm/hr is achievable;
- The Outline Code of Construction Practice does not demonstrate any of the proposed mitigations is deliverable;
- The Applicant has assumed only 50% of the impermeable areas generate run-off – this has no reasonable explanation – hence the design calculations are erroneous;
- The Applicant has failed to consider severing land drains, removing water courses and storage – their sole focus is mitigation using the SUDS basins;
- The Applicant has used a Factor of Safety of 1 – which is inadequate given the downstream flood risk and is lower than national guidance (CIRIA SUDS Manual) and local guidance (Suffolk FRM Strategy); and
- SCC challenges the run-off coefficients used by the Applicant.

SCC raises the following critical points about the Applicant's Comments on the Local Impact Report:

- Adequate surface water storage has not been demonstrated as being deliverable for the CCS or the cable corridor;
- No information is provided on construction phase surface water management mitigation measures;
- No evidence has been provided the required construction phase surface water management measures are deliverable;

- Concerns about the amount of sediment to be captured and the adequacy of the use of geotextiles to address this;
- Failure by the Applicant to adequately consider 40% allowance for climate change;
- Multiple statements in the SOCG between SCC and SPR remain 'not agreed';
- Disagrees with the Applicant that flood risk receptors should not be assessed due to the Applicants' proposed flood mitigation measures – SCC states assessment of the catchment is required to inform flood measure adequacy.

SCC raises the following critical points on the Applicants' Comments on Responses to EXA WQ1

- The flood mitigation options have not been demonstrated as being deliverable;
- Waiting for the final CoCP to finalise the flood mitigation options could result in insufficient space existing for adequate flood risk mitigation;
- The construction phase may be a greater flood risk to Friston – but only the Operational Phase is having a Drainage Management Plan developed;
- The Applicant does not explicitly confirm the National Grid Sub-station SUDS structures will be maintained in perpetuity;

SCC makes specific further responses to the ISH2 Action Point requested of SCC on infiltration basins. SCC makes the following additional critical points to those stated above:

- The Factor of Safety used by the Applicant is unacceptably low, resulting in the undersizing of the SUDS drainage scheme. The FoS suggested from the table provided by SCC is 10 – the Applicant has used an FoS of 1;
- A feasible infiltration rate does not mean infiltration is viable, and could result in groundwater flooding in Friston – requiring further geological assessment;
- The storm water storage basins could be above ground – the OLEMS shows they are on the downslope side; and
- The SUDS basins are sized on 50% of areas being impermeable – but no justification is provided.

In short, SCC is highly critical of the Applicants' Deadline 3 submissions, and has major reservations on whether the storm water management measures can provide adequate flood mitigation to Friston Village, given the lack of ground investigation, undersizing of the lagoons, failure to consider construction phase area and sediment, and lack of area available to the Applicant.

GWP fully agrees with the concerns and reservations expressed by SCC.

3. COMMENTS ON SPR DEADLINE 3 SUBMISSIONS

3.1 SPR Outline Operational Drainage Management Plan

The Applicant repeatedly referred in Deadline 2 submissions to surface water flood risk mitigation measures being provided in an Outline Operational Drainage Management Plan (OODMP) which would be submitted as part of Deadline 3. This is now available as a Deadline 3 submission.

The Applicants' OODMP is a 38 page document containing a brief description of the current site and watershed characteristics, a policy framework overview, an introduction to sustainable drainage principles and 1 page of summary calculations.

This document is not a drainage plan, it simply articulates a drainage strategy which includes various options, without demonstrating the achievability of any options. There is not even an outline

conceptual drainage scheme layout provided. The summary calculation sheet has no supporting calculations and appears to not include infiltration at all.

This document provides no further details than those previously provided in earlier Submissions. It provides no evidence that infiltration is achievable and the only calculations appear to suggest all attenuated water will be released to the local water course – thus significantly increasing the TOTAL flows generated from the site and entering Friston Village.

It is noteworthy the Applicant identifies the October 2019 flood event in Friston as only a 1 in 40 year return period event – that is to say the actual flood events to which the proposed development must provide mitigation of 1 in 100 Year +40%, are considerably larger.

The Applicant has also included a surface water flood risk map, which clearly shows the overland flow routes hydraulically linking the proposed development site to the water courses flowing through Friston Village.

It is entirely inadequate to provide this document as assurance of mitigation of surface water flood risk associated with the proposed development, on Friston Village. The document contains no details of flood risk assessment or impact, nor adequacy or achievability of mitigation measures.

As its title suggests, the OODMP completely omits to consider the construction phase, with its wider footprint area and greater likelihood of mobilising sediment laden storm run-off water.

3.2 SPR Outline Code of Construction Practice

The Outline CoCP is a 60+ page document outlining proposed construction practices to be adopted by the Applicant.

The OCoCP states a Surface Water and Drainage Management Plan and Flood Management Plan will be produced as part of the final CoCP.

The OCoCP contains general statements about proposed sediment containment, pollution prevention and storm flow management options and on-site construction practises.

A reference to the controlled run-off rate being at least the equivalent greenfield run-off rate, is ambiguous and makes no mention of TOTAL flow increase and reduction through infiltration.

The OCoCOP provides no details on construction phase surface water management, no scheme designs, no design parameters, no sizing, and no evidence the general statements and practises can actually be realised within the constraints of the site.

3.3 SPR Comments on SASES Deadline 1 Submissions

The Applicant provides 20+ pages of comments on SASES Deadline 1 Submissions relating to flood risk of Friston.

The Applicant's main responses are to refer to the Outline CoCP and the Operational Drainage Management Plan – both documents reviewed in earlier sections of this report.

The Applicant also refers to having undertaken a Flood Risk Assessment in accordance with EN-1. This is self-evidently not the case – the Applicant has not considered TOTAL run-off flows leaving the proposed site (5.7.21) and has not demonstrated the TOTAL flows can be reduced to pre development rates (5.7.22).

The Applicant also advises in its responses to SASES comments that in the SOCGs it has the agreement of the Councils that it has adequately characterised the baseline environment in terms of flood risk. Again it is self-evident from SCC submissions to Deadline 3 that they have significant concerns about the Applicant's assessment of surface water flood risk and its mitigation.

The Applicant routinely responds stating the site is in Flood Zone 1 and the Environment Agency has no objections. This is an evasive and irrelevant argument – the EA is not responsible for and therefore will not comment on surface water storm run-off.

The Applicant references a number of industry best practise documents but fails to recognise that infiltration capacity on site is unproven and that consequently the viability of the infiltration basin option is unproven.

GWP CONSULTANTS
JANUARY 2021