



SHE transmission

St. Fergus Gas 132/11 kV Substation St. Fergus Gas 132/11 kV Substation

Summary of ornithological Winter Vantage
Point surveys

6 August 2020

Project No. 048671

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Summary of ornithological Winter Vantage Point surveys

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1.1 Introduction to the Project

Scottish Hydro Electric Transmission has a statutory duty under Schedule 9 of the Electricity Act 1989 to develop and maintain an efficient, coordinated and economical electrical transmission system in its licensed areas. Where there is a requirement to extend, upgrade or reinforce its transmission network, SHE Transmission's aim is to achieve an environmentally aware, technically feasible and economically viable route which would cause the least disturbance to the environment and the people who use the area.

SHE Transmission is seeking consents for the installation of a new substation near the existing St Fergus Gas Grid, in Buchan in north Aberdeenshire, with overhead line (OHL) diversion works to tie in the existing transmission lines to the new development. The reinforcement is being driven by replacement of the 132/11kV transformers within the existing substation. SHE Transmission is preparing to replace two transformers from the existing St Fergus Substation with a new substation as there is not sufficient space within the existing substation to facilitate the replacement on site.

The Transformer Replacement project comprises the following elements:

- modification of the existing OHL;
- installation of a new OHL tower and Cable Sealing End (CSE) compound;
- construction compound;
- replacement of two grid transformers to be housed (indoor) within a new substation location;
- installation of cable linking CSE compound to new substation; and
- a new control building to house welfare, protection, batteries, Low Voltage Alternating Current (LVAC) metering and communications.

Based on initial desk based review of published information, the main ornithological features that may be affected by proposed works are overwintering waterfowl species ⁽¹⁾ associated with the Loch of Strathbeg SPA, particularly geese and whooper swans. They were identified as potentially sensitive receptors, as the proposed works are within their core foraging range. ⁽²⁾

The focus of this report is the presence of the temporary OHL diversion as conductors may present a collision risk to winter geese and swans. Poles and conductors will be in place for a maximum of 6 months to maintain supply to the existing St Fergus Gas whilst the cable and new St.Fergus Gas are installed. The new tower (permanent) will be approximately 32.3 m high. The temporary poles were initially proposed to be similar in height to the existing towers, with a conductor height of 17-20 m. However the revised preferred approach will use smaller trident poles, with conductors attached at 10 meters above the ground and their lowest point at 7 meters above the ground.

1.2 Wintering Vantage Point Surveys

Winter Vantage Point (VP) surveys following guidance issued by SNH ⁽³⁾ were carried out in 2018/19. Thirty six hours of watches were undertaken between October 2018 and February 2019 and surveys took place on:

(1) Pink-footed (*Anser brachyrhynchus*), greylag geese (*Anser anser*), whooper swan (*Cygnus cygnus*), barnacle goose (*Branta leucopsis*), teal (*Anas crecca*) and goldeneye (*Bucephala clangula*).

(2) <https://www.nature.scot/professional-advice/land-and-sea-management/managing-wildlife/managing-geese/loch-strathbeg-local-geese-management-scheme> (accessed 02.09.19).

(3) SNH. Assessment and mitigation of impacts of power lines and guyed meteorological masts on birds. Guidance. Version 1. July 2016.

- 9th/10th October 2018;
- 8th November 2018;
- 27th November 2018;
- 10th/11th December 2018;
- 30th/31st January 2019; and
- 25/26th February 2019.

Surveys have taken place from a vantage point approximately 275 m from the proposed works using a 2 km viewshed (*Figure 1*). The following height bands were set prior to the start of the first survey, based on the preliminary project design:

- Height Band One - <17 m;
- Height Band Two – 17 – 25 m; and
- Height Band Three - >25m.

With the revised trident tower design with conductors at 7-10 m, Height Band One was taken as recording flights at collision risk height.

October

The October survey recorded one SPA qualifying interest species, pink-footed goose (*Anser brachyrhynchus*) in the vicinity of the proposed temporary OHL. No flights at potential collision height were recorded. Four pink-footed goose flights were recording flying over the wider survey area all above collision risk height. A single flight of 50 pink-footed geese landed and foraged in a wheat field approximately 480 m south-west of the proposed works. Two flights of unidentified grey geese were recorded flying over the survey area. One flock of approximately 100+ flying above collision height and not in the vicinity of the proposed temporary OHL. The remaining flock of approximately 100+ was recorded flying significantly higher than the potential collision height but and in the vicinity of the proposed temporary OHL. One flight of greylag goose (*Anser anser*) was recorded above collision height approximately 1.5 km north of the proposed temporary OHL alignment.

November

Two surveys were undertaken in November. Thirteen flights by whooper swan (*Cygnus cygnus*) were recorded, twelve of which were above collision risk height. A single whooper swan flight at collision risk height was recorded but did not cross the proposed temporary OHL alignment. Three flights of barnacle goose (*Branta leucopsis*) were recorded, all above collision risk height. Twenty three flights of pink-footed geese were recorded, all above collision risk height. Seven flights of greylag geese were recorded. Six were above collision risk height, and the one flight recorded at collision risk height did not cross the proposed temporary OHL alignment. Twenty four flights of unidentified grey geese (too high or too distant to positively identify to species) were recorded. Seven of these flights were of flocks of geese landing or taking off from fields approximately 500 m north of the proposed temporary OHL, which passed through collision risk height but did not cross the proposed temporary OHL alignment.

Figure 1: Potential collision risk flights crossing proposed temporary OHL during 2018/19 winter Vantage Point surveys.



December

The December survey recorded approximately 300 pink-footed geese loafing under the existing OHL on an inundated area of water on low-lying farmland. They remained in this area for the duration of the three hour watch during which time a further 150 pink-footed geese arrived. Six flights by pink-footed geese at collision risk height, comprising a total of 229 birds, crossed the proposed temporary OHL (Table 1.1 and Figure 1). Further flights by pink-footed geese at collision risk height, comprising a total of 2 birds, were recorded landing in, or alighting from, the inundated field, crossing the proposed temporary OHL. A further 609 pink-footed geese were recorded flying above collision risk height although they did not cross the proposed temporary OHL.

January

The January survey recorded 51 pink-footed geese flights within the dawn watch ⁽¹⁾. Four of these flights crossed the proposed temporary OHL location at collision risk height. A further four flights were recorded at collision risk height but did not cross the proposed temporary alignment. The remaining 43 flights were above collision risk height.

February

The February survey recorded 17 flights, two at collision risk height. These two flights comprised approximately 400 birds, which landed in fields not directly affected by the project. Most flights were high above 100m.

Table 1.1 Winter geese and waterfowl flight data from 2018/19 VP surveys.

Species	Number of flights in the 2km viewshed	Number of birds in flights in the 2km viewshed	Number of flights at collision risk height crossing proposed temporary OHL	Number of birds within flights at collision risk height crossing proposed temporary OHL	Loch of Strathbeg SPA population ⁽²⁾	% Proportion of Loch of Strathbeg SPA population of flights crossing OHL
Pink footed goose (<i>Anser brachyrhynchus</i>)	168	3,357	10 ⁽³⁾	319	27,500	1.16
Whooper swan (<i>Cygnus Cygnus</i>)	13	89	0	n/a	245	0
Greylag goose (<i>Anser anser</i>)	8	236	0	n/a	5,565	0
Barnacle goose (<i>Branta leucopsis</i>),	3	87	0	n/a	520	0
Teal (<i>Anas crecca</i>);	0	0	0	n/a	1,270	0

(1) No flight activity was recorded during the dusk watch in December or January

(2) SNH i-site Loch of Strathbeg SPA citation <https://sitelink.nature.scot/site/8537>

(3) Three flights with flocks of less than 10 birds, and seven flights with between 20 and 80 birds).

Goldeneye (<i>Bucephala clangula</i>)	0	0	0	n/a	150	0
Unidentified grey geese ⁽¹⁾	28	1,467	0	n/a	n/a	0

1.3 In summary:

- Ten flights of pink-footed goose at collision risk height crossed the location of the proposed temporary OHL;
- No flights at collision risk height were recorded crossing the proposed temporary OHL from the remaining winter qualifying interest species from the Loch of Strathbeg SPA (whooper swan, greylag goose, barnacle goose, teal (*Anas crecca*) and goldeneye (*Bucephala clangula*).
- Ninety eight flights of pink-footed goose, twelve flights of whooper swan, seven flights of greylag goose, three flights of barnacle goose and twenty one flights of unidentified grey geese were recorded above collision risk height during the winter VP surveys. The majority of these were flights of birds commuting high above the survey area;
- The majority of observed flights throughout the surveys were by pink-footed and greylag geese travelling to and from the Loch of Strathbeg SPA very high (100-200m) above the survey area. Some flights were too high to identify to species and these were recorded as unidentified grey geese; and
- Pink-footed geese were drawn to waterlogged inundation areas in the vicinity of the existing line. No collisions with the existing line were observed during surveys.

(1) Flying too high to identify, well above collision risk height