
3 Alternatives and Scheme Evolution

3.1. Introduction.....	3-2
3.2. Design Process	3-3
3.3. Layout and Design Evolution	3-4
3.4. Summary	3-15

3. Alternatives and Scheme Evolution

3.1. Introduction

- 3.1.1. The Environmental Impact Assessment (EIA) Regulations require the consideration of alternatives and an indication of the reasons for selecting the site, except where limited by constraints of commercial confidentiality. Paragraph 5(2)(d) of the EIA Regulations requires that an EIA Report includes *“a description of the reasonable alternatives studied by the developer, which are relevant to the development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment”*.
- 3.1.2. Part 2 of Schedule 4 of the EIA Regulations similarly notes the following requirement: *“A description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the developer, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects”*.
- 3.1.3. This Chapter provides information on the design iteration process undertaken to arrive at the final development layout and design of the Proposed Varied Development.
- 3.1.4. The EIA process provides an opportunity to integrate technical and environmental considerations into the iterative design of a development, allowing potential environmental effects to be considered and minimised so that the environment is considered within the Proposed Varied Development design layout from the earliest stage.
- 3.1.5. The final design of the Proposed Varied Development represented in this EIA Report was arrived at following iterative consideration of many alternative design configurations, including positioning of turbines, turbine scale, layout and design of tracks and ancillary infrastructure. This Chapter describes the design iteration process from which the Proposed Varied Development design was selected.
- 3.1.6. The final design for the Proposed Varied Development is described in **Chapter 4: Description of Proposed Varied Development** and is shown in **Figure 4.1**.
- 3.1.7. This Chapter should be read with reference to Chapter 3 of the Consented Development's 2018 EIA Report (Infinergy, 2018) and Chapter 3 of the subsequent 2019 AEI Report (Infinergy, 2019).

Site Location, Site Selection and Consideration of Alternatives

- 3.1.8. The EIA Regulations require that the EIA Report provides information on reasonable alternatives that have been considered, for example in terms of project design, technology, location, size and scale, and an indication of the main reasons for the option chosen. As noted in Planning Advice Note (PAN) 1/2013, *“Whilst the Directive and the*

Regulations do not expressly require the applicant to study alternatives, those alternatives which are in any case considered as part of the project planning and design process must be assessed, and an outline of the main alternatives studied by the applicant included in the EIA Report. The EIA Report must also give an indication of the main reasons for the choice made, taking into account the environmental effects”.

- 3.1.9. This EIA Report undertaken in support of the Proposed Varied Development is inherently compliant with the requirements under the EIA Regulations relating to the consideration of alternatives as it outlines the likely effects on the environment arising from an alternative to the Consented Development. A comparison of the environmental effects between the Consented Development and the Proposed Varied Development is set out in each technical chapter.
- 3.1.10. The Applicant considered a number of design iterations over a five-year period before reaching the finalised design of the Consented Development, starting from an initial 45 turbine layout in 2013 and ending with the consented layout of 17 turbines in 2019. The design evolution for the Consented Development is outlined in Chapter 3 of the 2018 EIA Report (Infinergy, 2018) and Chapter 3 of the 2019 AEI Report (Infinergy, 2019).
- 3.1.11. The site boundary for the Proposed Varied Development remains the same as the Consented Development. Chapter 3 of the 2018 EIA Report (Infinergy, 2018) also outlines the site section process, and the content of that chapter remains valid and relevant to the Proposed Varied Development.
- 3.1.12. The following section outlines the alternative designs that the Applicant has considered for the Proposed Varied Development, following on from the Consented Development and is informed by baseline data, technical assessments and consultation feedback.

3.2. Design Process

Design Principles

- 3.2.1. Current best practice guidance provides a framework for the consideration of key design issues including turbine size, layout composition, wind farm design in relation to landscape character, and designing for multiple wind farms (SNH [now NatureScot], 2017).
- 3.2.2. The following principles were adopted during the design iterations made by the Applicant to ensure that the final design of the Proposed Varied Development was the most suitable for the site:
- Minimise the number of variations required from the Consented Development.
 - Create a scheme which maximises the potential of the site to generate renewable energy, while respecting technical and environmental constraints as noted below.
 - As far as possible in consideration of other physical and environmental constraints, avoid inconsistent turbine spacing, such as relatively large gaps, outliers or excessive

overlapping turbines to minimise visual confusion and ensure a balanced / compact array from key views.

- Maintain suitable inter-turbine spacing to ensure safe and efficient operation of the turbines.
- Maximise distance between turbines and residential properties as far as possible.
- Minimise setting impacts on nearby cultural heritage assets, including Craigengillan Cairn, Stroanfreggan Craig fort and Stroanfreggan Bridge Cairn.
- Avoid of areas of deep peat wherever possible.
- Avoid siting turbines on steep slopes.
- Avoid siting turbines and other infrastructure on blanket bog habitat; avoid other sensitive habitats wherever possible.
- Minimise felling requirements.
- Maintain suitable buffers around identified bird breeding sites as appropriate.
- Maintain at least a 500 metres (m) buffer from Craigengillan Cairn.
- Maintain a 50 m buffer around watercourses except where crossings are required.
- Maintain suitable buffers from the proposed Lorg Wind Farm 132 kilovolts (kV) overhead line.
- Use existing infrastructure as far as practicably possible.

3.2.3. The above factors were carefully evaluated, as evidenced by the number of design iterations of the proposed variation. The final development layout is the eighth iteration after the Consented Development application was approved (noting some iterations involved only limited and minor change). These iterations are described in the next section. The final development layout is shown in **Figure 4.1** which accompanies **Chapter 4**.

3.3. Layout and Design Evolution

3.2.4. As outlined in **Chapter 1: Introduction**, the Applicant has calculated that the energy yield of the Consented Development can be significantly increased by increasing the height of the proposed turbines. This increase in turbine height, together with the reduction in turbine numbers, would only result in limited changes to environmental effects, as described in this EIA Report. These primary factors have encouraged the Applicant to apply for a variation to the Consented Development.

3.2.5. The layout of the Proposed Varied Development has been an iterative process which started in March 2024, each time taking into consideration information gathered through

site assessments or comments from consultees, as well as the professional judgement of technical experts.

- 3.2.6. Since the submission of the EIA Scoping Report (July 2024) and the receipt of the EIA Scoping Opinion (November 2024) the Applicant has undertaken design iterations to maximise the capacity of the Proposed Varied Development while minimising the environmental impacts.
- 3.2.7. The main iterations of the proposed layout have been separated into eight key stages and are described below within **Table 3.1** and shown on **Figures 3.1 – 3.5**. These iterations have taken into consideration the on-site environmental and engineering constraints to reduce the impacts on the wider landscape, heritage assets and avoid watercourses and sensitive habitats.

Table 3.1 - Design Iterations

Design Iteration	No. Turbines	Tip Height	Date	Description
A (Figure 3.1)	13	200 m	March 2024	Initial design layout of 13 turbines at 200 m tip height; maximising yield and capacity against on-site constraints identified through updated desk studies, survey data and consultee feedback for the Consented Development. The Consented Development's turbine locations were evaluated primarily from a landscape and cultural heritage perspective to inform this initial layout (refer to paragraphs 3.2.12 - 2.2.23 for further detail). This iteration was the turbine layout shown in the Scoping Report submitted in June 2024 and which was circulated to consultees before the Scoping Opinion was issued.
B (Figure 3.1)	13	200 m	July 2024	Layout B was developed from the initial Layout A and saw the introduction of a revised track and hardstanding design. Following the results from recent peat probing survey work, a design workshop involving the project engineer and the peat and hydrology technical leads resulted in minor adjustments to the positions of T1, T2, T3, T5, T6, T7 and T10 and associated hardstanding and track alignment to avoid areas of deeper peat whilst minimising the cut

Design Iteration	No. Turbines	Tip Height	Date	Description
				and fill required to construct access tracks and turbine hardstands. The compounds and borrow pit infrastructure were also re-introduced to the design and remain the same as the Consented Development, with a minor relocation of the main temporary construction compound (rotated 90 degrees anti-clockwise and moved 65 m south) to reduce the size of the earthworks required to create a level platform, and avoid deeper areas of peat.
C (Figure 3.2)	13	200 m	August 2024	Micrositing of T3 and T13 and their associated infrastructure following the results of additional targeted peat probing to further avoid areas of deeper peat.
D (Figure 3.2)	13	200 m	September 2024	Layout D was developed following further hydrological review. The hardstands and tracks associated with T3 and T5 were realigned further north and south respectively to respect a minimum 50 m standoff from the nearby watercourses. Layout D also involved an expansion of the battery energy storage system (BESS) compound to accommodate the increased storage capacity proposed as part of the Proposed Varied Development. The location of the Consented Development's BESS compound was reviewed by both environmental technical specialists and engineering leads to confirm that the enlarged footprint could be accommodated. This review considered updated peat-probing results, as well as the compound's proximity to the likely grid connection point, to ensure that any required cabling works are minimised.

Design Iteration	No. Turbines	Tip Height	Date	Description
				This layout was considered 'design chill'.
E (Figure 3.3)	13	200 m	November 2024	Following a design review involving the project engineer and all environmental technical leads, small refinements were made to the design chill layout. This included a small rotation to the hardstandings of T3 and T4 to move associated earthworks away from deep peat areas, and the further micro-siting of T10 away from deeper areas of peat. This was the layout presented within the Gatecheck 1 Report.
F (Figure 3.3)	11	220 m	November 2025	Wind yield analysis of Layout E concluded that the layout was likely to be unviable, primarily due to wake losses and forestry-related constraints. In response, the layout was revised, reducing the number of turbines from 13 to 11 to lessen the potential for wake effects. Seven of these turbines were repositioned slightly from their Layout E locations to improve inter-turbine spacing while also avoiding known environmental constraints. The associated hardstandings and track network were subsequently realigned to reflect the turbine removals and relocations. With input from the landscape consultant, the tip height of the remaining 11 turbines was increased from 200 m to 220 m to reduce the potential impact of forestry-related constraints and improve overall wind yield. The locations of the substation, Battery Energy Storage System (BESS) compound, construction compound and borrow pits remain unchanged from those identified in Layout E.

Design Iteration	No. Turbines	Tip Height	Date	Description
				This layout was considered to represent the 'revised design chill'.
G (Figure 3.4)	11	220 m	January 2026	Following updated peat-depth surveys, several design refinements were made to reduce potential impacts on peat and hydrology, as well as to minimise cut-and-fill requirements. The hardstanding at T1 was flipped and re-oriented anticlockwise, while T3 was relocated approximately 120 m north-east to avoid deeper peat and move outside watercourse embankments. T4 was moved around 150 m east to ensure its hardstanding was set back from a nearby watercourse. At T5, the hardstanding was flipped and re-oriented clockwise to avoid deeper peat, and the hardstanding at T6 was rotated anticlockwise to allow the access track approaching from the south to utilise a route of shallower peat. T7 was moved approximately 25 m north-east to avoid areas of greater peat depth.
H (Figure 3.4)	11	220 m	March 2026	Following the revisions made for Layout G, further targeted peat-depth survey work was undertaken which informed several final design refinements. The hardstanding at T4 was re-oriented clockwise to move out of deeper peat, with the associated access track realigned accordingly. T5 was relocated approximately 15 m north, with its hardstanding also re-oriented clockwise and its access track adjusted to avoid deeper peat. A minor realignment of the track north of T6 was introduced for the same reason. T8 was relocated approximately 20 m south-east, and its hardstanding flipped

Design Iteration	No. Turbines	Tip Height	Date	Description
				to avoid an area of deeper peat. At T10, the hardstanding was re-oriented anticlockwise, with the access track realigned to avoid deeper peat. In addition, the track between T9 and T11 was realigned to avoid a localised pocket of deeper peat. A design review involving the project engineer and all environmental technical leads confirmed that this is the layout for which Section 36C consent is sought.

- 3.2.8. As illustrated in **Table 3.1**, the final Proposed Varied Development layout has been informed by a robust design iteration process, taking into account potential environmental, landscape and visual and cultural heritage impacts and their effects, physical constraints, and health and safety considerations.
- 3.2.9. Following the initial chill of the Proposed Varied Development's layout in November 2024, a workshop was held with the project's ecologists, geologists, hydrologists and forestry consultants to formulate the optimal locations for biodiversity enhancement areas within the site, which were continually reviewed and refined as the design of the Proposed Varied Development evolved. This formed the basis of the Habitat Enhancement and Management Plan (HEMP) which will be implemented during the life of the Proposed Varied Development. This plan offers opportunities for interrelated environmental enhancements at the site with respect to peat, biodiversity and forestry. Key features of this plan include restoring degraded blanket bog habitat by removing conifer plantation and implementing measures such as furrow blocking and ground smoothing, creating and managing dry heath and acid grassland habitats, establishing native broadleaved woodland, enhancing riparian zones to improve connectivity, and installing fencing to protect young trees.
- 3.2.10. An outline HEMP is included as **Appendix 9.8** which provides further detail on these proposed management measures. This represents a significant increase in proposed biodiversity enhancement measures than that associated with the Consented Development.
- 3.2.11. The final Proposed Varied Development layout being taken forward and assessed as part of the EIA and application submission is shown in **Figure 4.1**. Further information on specific elements of the design is provided below.

Turbines

- 3.2.12. A number of different turbine candidate types and dimensions were considered as variation options for the Proposed Varied Development. Each option was generated, and the wind farm yield outputs were modelled using met mast data. As with the layout options for the Consented Development, this was then subject to a financial modelling exercise to establish whether they were economically viable.
- 3.2.13. The modelling exercise initially established that a layout with a height of 200 m to tip and 163 m rotor diameter would be the most viable, allowing for a much greater energy yield with fewer turbines than that of the Consented Development. The Consented Development's turbine locations were evaluated primarily from a landscape, cultural heritage and wind yield perspective, and four turbines were removed, whilst a further three were relocated slightly beyond micro-siting to accommodate the larger turbines. This layout was brought forward as Layout A of the Proposed Varied Development (the turbine layout presented at Scoping).
- 3.2.14. Following the initial turbine layout presented at Scoping, small amendments to the turbine locations in Layouts B – E were made primarily in response to targeted peat probing results in order to avoid the deepest areas of peat (refer to **Table 3.1** above).
- 3.2.15. Following the confirmation of Layout E, the Applicant undertook further wind yield analysis of the Proposed Varied Development, which indicated that the layout may not be viable, primarily due to wake losses and forestry-related constraints. As a result, further design iteration, informed by additional survey work, was undertaken to improve the viability of the Proposed Varied Development. The number of turbines was reduced further from 13 to 11, with ten of these remaining turbines adjusted from their Layout E position to improve spacing. To further address forestry-related limitations and improve wind yield, the tip height of the 11 turbines was increased from 200 m to 220 m following a review of the potential for the increased tip heights to impact on cultural heritage assets and landscape and visual receptors. This layout was considered the 'revised design chill', referred to as Layout F.
- 3.2.16. Once Layout F was established, minor amendments (refer to **Table 3.1** above) were again made to the turbine locations in Layouts G – H, informed by targeted peat probing results and design review workshops in order to maintain appropriate distances from water features, avoid the deepest areas of peat, and reduce earthworks requirements.
- 3.2.17. The Applicant identified the following six consented turbines as optimal for removal from the Consented Development's layout for the following reasons:
- T3 – This was the eastern most turbine of the Consented Development. By omitting this turbine from the layout, the view of the north from Craigengillan Cairn would be less obstructed as the angle of visibility within which there are no turbines would be greatly increased. With the removal of T3, the easternmost turbine of the Proposed Varied Development would now be T4, approximately 160 m further west of the previous position of T3. No additional infrastructure is proposed to encroach any

further into this visibility splay, as embedded in the design of the Consented Development. The angle of visibility within which there are no turbines would be greatly increased due to the omission of this turbine.

- T8, T12, T15 and T16 – These turbines were deleted primarily to avoid excessive overlapping of turbines to minimise visual confusion, ensure a balanced array from key views in the local landscape, and avoid a wake effect which would result in reduced efficiency and power output of the Proposed Varied Development.
- T9 – This was the nearest Consented Development turbine to Craigengillan Cairn (SM2238). Removal of this turbine from the Proposed Varied Development layout decreases the potential for the Proposed Varied Development to have an adverse impact on the integrity of Craigengillan Cairn, as well as Stroanfreggan Craig Fort (SM1095).

3.2.18. The removal of these turbines also allowed for a reduction in the length of associated access track required for the Proposed Varied Development, as five out of the six turbines (T3, T8, T9, T12 and T15) were accessed via dead-end tracks.

3.2.19. The key element of the variation is that the locations of three of the proposed turbines are within micro-siting allowance for the Consented Development, whilst a further four remain broadly within the same location but beyond the micro-siting allowance. The remaining four turbine's locations have been adjusted to incorporate on-site constraints and the larger turbine infrastructure (refer to **Table 3.1** above) and remain within a similar pattern of development to the Consented Development.

3.2.20. In designing the turbine layout for the Proposed Varied Development, the Applicant considered in detail the consultations recorded throughout the previous application process for the Consented Development, and in particular the previous engagement undertaken with Historic Environment Scotland (HES). The layout of the Proposed Varied Development, through fixing most of the turbines on or within very close proximity to their consented positions, maintains reciprocal intervisibility as previously agreed with HES through embedded mitigation in the Consented Development between Scheduled Monuments Craigengillan Cairn (SM2238) and Stroanfreggan Craig Fort (SM1095) with the valley of the Water of Ken.

3.2.21. Moreover, based on general good practice design principles (as set out in NatureScot guidelines) and an analysis of site-specific opportunities and constraints, the Proposed Varied Development's layout evolved to take into consideration a number of landscape and visual constraints. A design rationale has also been adopted to avoid inconsistent turbine spacing, outliers or excessive overlapping turbines to minimise visual confusion and ensure a balanced and compact array from key views in the local landscape. The proposed turbines have been positioned to avoid areas of higher ground as far as practical ensuring that the Proposed Varied Development is perceived as being set down in the landscape as far as possible.

3.2.22. The introduction of the requirement for aviation lighting (as opposed to the Consented Development where the tallest turbine is below 150 metres) has also been a key consideration. A focus of the design process was to seek to reduce the potential for night-time visibility from Galloway Forest Park and other distant receptors through the agreement of a reduced lighting scheme with the Civil Aviation Authority (CAA) and the Ministry of Defence (MoD). Mitigation of visible turbine aviation lighting has been designed into the scheme by adopting a reduced visible aviation lighting scheme where only a limited number of turbines are lit (T1, T4, T5, T6, T7 and T11). Further information on the agreed lighting scheme can be found in **Chapter 16: Aviation**.

3.2.23. **Figure 3.5** shows the key on-site constraints which were considered in the design iteration process noted above. This figure seeks to illustrate how the final design has appropriately responded to and avoided key constraints, while maintaining suitable turbine spacing. The aesthetic design of the development and potential landscape and visual effects, as well as effects on the settings of cultural heritage assets, have also been carefully considered in arriving at the final design.

Associated Infrastructure

3.2.24. An initial outline design of crane hardstandings and access tracks was developed based on Layout B to accommodate the removal and relocation of turbines, as well as their increased size. This was based on recommendations for hardstanding size and specification and ensuring suitable track alignment to allow safe access and delivery of components, taking account of topography. Siting and layout of hardstandings and tracks sought to avoid deep peat wherever possible as well as utilising the existing tracks to minimise new tracks where appropriate. Where track routes could not entirely avoid deep peat, floated construction is proposed to avoid the requirement for excavation of peat.

3.2.25. The design of hardstandings and tracks evolved together with the turbine layout, to arrive at the final design shown on **Figure 4.1**. As outlined in **Table 3.1**, results of targeted peat probing were taken into consideration in the design evolution process to reach the final layout.

Site Access and Site Tracks

3.2.26. The proposed site access remains the same as the Consented Development. The Proposed Varied Development is to be accessed from the B729, entering the site from the south. This utilises a pre-existing established access route into the Smittons forestry plantation from the B729, to the south-east of Marscalloch Hill, which will be upgraded for the purposes of the Proposed Varied Development. The site access point was selected as the preferred option for the site access junction for the following main reasons:

- An access point at the southern end of the site would enable construction traffic to leave the public highway at an earlier point in comparison to alternative existing access points located at the eastern boundary of the site;

- The southern access point would avoid the need for upgrades to the B729 on the approach to Smittons Farm and the southern part of Lorg Road;
- The southern option is more concealed within plantation either side of the B729; and
- There is an existing quarry on the forestry track near the access point, which can be used as a borrow working at an early stage of the construction programme.

3.2.27. The proposed alignment of access tracks, developed from the track alignment for the Consented Development and refined through an iterative process based on the digital terrain model and site surveys, has sought to:

- Minimise the alterations required from the track design of the Consented Development; focusing on realignment of tracks to turbines that have either been removed or relocated;
- minimise the overall track length;
- upgrade existing forestry tracks where possible;
- minimise the variation of the vertical alignment of the tracks;
- minimise the number of dead ends within the layout; and
- minimise incursion into identified constraints, such as watercourse buffers, areas of deeper and potentially unstable peat, priority habitats, and steep slopes.

Borrow Pits

3.2.28. Borrow pits are required as a source of rock to be used in the construction of the tracks, hardstandings and foundations. The two borrow pit locations remain unchanged from the Consented Development as it is considered by the Applicant that they are already positioned in the most optimal locations.

3.2.29. The locations of the borrow working search areas were selected for the following main reasons:

- The borrow working search areas are located at pre-existing quarry sites used to create and maintain forestry tracks;
- The location of the southern borrow working area is relatively close to the main access junction, facilitating the upgrading and formation of the main access track into the site at an early stage of the construction programme;
- Borrow workings would be located in each part of the site to ensure that on site haulage movements are reduced;
- Workings are located outside of any environmental constraint areas such as areas of deeper peat or ecologically sensitive habitat; and

- The locations on the northern side of Marscalloch Hill and western side of Craigengillan Hill reduce the visibility of the borrow workings.

Compounds

Temporary Construction Compound

- 3.2.30. A temporary construction compound will be required to facilitate construction of the Proposed Varied Development. The location of the temporary construction compound remains broadly in the same location to that of the Consented Development (however reorientated slightly beyond micro-siting allowance), positioned near the site entrance for operational efficiency, adjacent to the access track serving the southern-most turbines. Its siting has also been informed by environmental constraints, ensuring it was not located on sensitive habitat or deep peat, and refined to minimise the associated earthworks footprint.

Substation and BESS Compound Location

- 3.2.31. The position of the substation compound remains the same as the Consented Development, which was selected for the following reasons:
- A location within the centre of the turbine area reduces the overall length of site cabling required and is therefore better in terms of electrical efficiency;
 - Proximity to the proposed Lorg 132 kV overhead line (the anticipated grid connection point for the Proposed Varied Development), which would minimise the length of overhead connection required between the on-site substation and the line;
 - The location is well set back from the eastern edge of the site thereby reducing its visibility, particularly from Lorg Road;
 - The location lies within an area which is not ecologically sensitive; and
 - The peat at the location is less than 0.5 m in depth.
- 3.2.32. The overall footprint of the compound has increased in size to accommodate the increased BESS capacity (refer to **Chapter 4** for further information). Relocation of the substation compound was considered by the Applicant however following further targeted peat probing it was concluded that the increased compound size could be accommodated at this location with little change to the anticipated environmental effects.

Micrositing

- 3.2.33. To be able to address any localised environmental sensitivities, unexpected ground conditions or technical issues that are found during detailed intrusive site investigations and construction, it is proposed that agreement is sought for a micro-siting allowance of 100 m around all wind farm infrastructure. The technical assessments (presented in **Chapters 7 to 18**) have considered the potential for micrositing and it is considered that

the proposed infrastructure could be microsituated without resulting in potential new effects. During construction, the need for any microsituation would be assessed and agreed with the on-site Environmental Clerk of Works (ECoW) and Archaeological Clerk of Works (ACoW).

3.4. Summary

- 3.2.34. The final Proposed Varied Development layout has been informed by a robust design iteration process, taking into account potential environmental, heritage, and landscape and visual impacts and their effects, physical constraints, safe and efficient operation of the development, and health and safety considerations. The information used to inform the design iteration process included baseline data (desk studies and field surveys both for the Consented Development and updated for the Proposed Varied Development where appropriate), review of preliminary visualisations, ongoing impact assessments and consultation feedback.
- 3.2.35. The final turbine layout and scale has been designed to maximise renewable energy generation from the site, whilst limiting the change in environmental effects in comparison to the Consented Development.
- 3.2.36. The EIA Report is based on the final layout selected for the Proposed Varied Development. The final layout comprises 11 turbines up to 220 m in height and associated access tracks and crane hardstandings, substation and BESS facility, a temporary construction compound, and two borrow pits. The final layout of the Proposed Varied Development is described in detail in **Chapter 4** and shown on **Figure 4.1**.

References

Infinergy (2018). Shepherds' Rig Wind Farm Environmental Impact Assessment Report. Available at: <https://www.shepherdsrigwindfarm.co.uk/downloads/>

Infinergy (2019). Shepherds' Rig Wind Farm Additional Environmental Information Report. Available at: <https://www.shepherdsrigwindfarm.co.uk/downloads/>

Scottish Government (2013, revised 2017). Planning Advice Note (PAN) 1/2013. Available at: <https://www.gov.scot/publications/planning-advice-note-1-2013-environmental-impact-assessment/>

SNH (now NatureScot) (2017). Siting and Designing Wind Farms in the Landscape. Version 3a. Available at: <https://www.nature.scot/siting-and-designing-wind-farms-landscape-version-3a>

Abbreviations

Abbreviations	Definition
ACoW	Archaeological Clerk of Works
BESS	Battery Energy Storage System
EIA	Environmental Impact Assessment
ECoW	Ecological Clerk of Works
ha	Hectares
HEMP	Habitat Enhancement and Management Plan
kV	Kilovolt
PAN	Planning Advice Note
SNH	Scottish National Heritage