Open Agenda

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Memorandum for Executive Council

SUBJECT **Development Application - Proposed Installation of Three Wind Turbines and Energy Storage System at Deadwood Plain**

Memorandum by the Chief Secretary

ADVICE SOUGHT

1. **Executive Council is asked to consider and advise whether Full Development Permission should be granted, with Conditions, for the Proposed Installation of Three Wind Turbines and Energy Storage System at Deadwood Plain as recommended by the Land Development Control Authority (LDCA).**

BACKGROUND & CONSIDERATIONS

2. At the Land Development Control Authority meeting held on 15 January 2020, it was recommended that FULL Development Permission be granted for the Proposed Installation of Three Wind Turbines and Energy Storage System at Deadwood Plain, subject to conditions as set out in Section D of the report in Annex A and the Decision Letter in Annex B.

3. In accordance with the directions issued by the Governor in Council to the Chief Planning Officer on 14 April 2014 under Section 23(1) of the Land Planning and Development Control (LPDC) Ordinance, 2013, the Chief Planning Officer is required to refer to the Governor-in-Council all applications for the Development of a site (or group of two or more sites in same vicinity) which exceeds (or exceeds in aggregate) five acres in area (Section 1), the development of public facilities (water, electricity, telephone or road) where the scale of the development is such that it has significant strategic or socio-economic implications (Section 6), Installation of photovoltaic system and energy saving equipment (Section 7.E1 – Reducing Reliance on Diesel) and installing renewable energy generation equipment and energy storage equipment (Section 7.E3 – Installing Renewables).

4. A copy of the directions is attached at Annex C for easy reference.

5. Section 17 (a) of the LPDC Ordinance reads:

   A grant of Development Permission may be of either of the following types:–

   a) Outline Development Permission - the effect of which is

to give approval in principle to the proposed development which is the subject of an application, but not to permit (except to the extent, if any, allowed by conditions attached to the permission) commencement of development to take place; or

b) Full Development Permission - the effect of which is to permit the development, subject to the terms and conditions of the grant of Full Development Permission.

6. PLANNING POLICY CONSIDERATION

6.1 The proposed development application is assessed against the Principle and Strategy of the Land Development Control Plan and in respect of the policies that apply and these include the following:

a. Principle 4: Encourage and facilitate sustainable use of water resources and renewable energy
b. Strategy 2.4: A presumption in favour of development for sustainable power generation, including wind and solar and marine power, together with protection of areas identified as important sites for those resources
c. Intermediate Zone Policy: IZ1
d. Energy Policies: E1, E2 and E3
e. Natural Heritage Policy: NH1(b)

6.2 In view of the Environment Impact Assessment undertaken in assessing the proposed development there is some impact on the local natural and heritage environment. Whilst the impact is considered to be significant, mitigation measures can reduce the negative or adverse impact to make the proposed development acceptable. Similarly, there are also a number of benefits arising from the development of renewable energy that further benefit the natural environment and meet objectives for climate change and carbon emission. The most significant LDCP policies are those related to energy which supports the development and implementation of wind turbines and/or other forms of sustainable power generation on the Island. Similarly the proposed development is in compliance with the LDCP policies to enable the development to be delivered. There are also significant positive economic and social benefits arising from this development that will improve power energy on the Island and reduce reliance on diesel fuel for power generation.

6.3 The overall conclusion of the proposed development is that it can be supported as it is compliant with LDCP policies and any adverse impact on the environment can be mitigated.

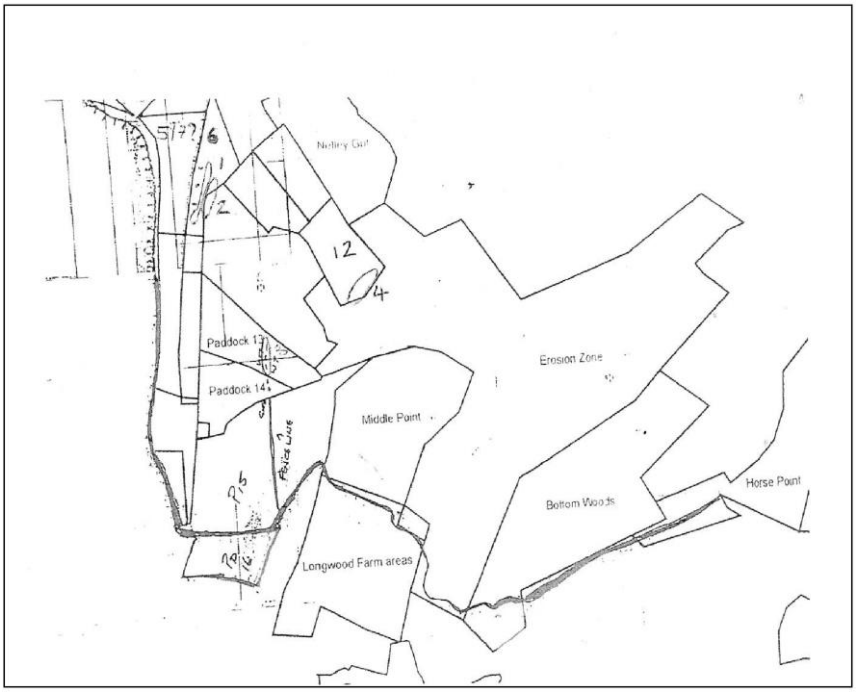
7 BACKGROUND OF DEVELOPMENT APPLICATION AND

REPORTS

7.1 There are 12 existing Wind Energy Solutions (WES) wind turbines on Deadwood Plain and these are located in paddocks 4, 5/7, 6 and Sheep Pound Gut in two roughly parallel lines. The first six WES turbines were installed in two batches of three in 1999 and 2009 respectively, while the second six turbines were constructed in 2013. Prior to the construction of the first three wind turbines in 1999, several locations on the Island were considered as potential sites for the wind farm, including: Deadwood Plain, Woody Ridge and Blue Point, however, the latter site was quickly dropped on account of the terrain. Anemometers were erected at the Deadwood and Woody Ridge sites in 1978 and weekly average wind speed data was collected up until 1987.

7.2 At the time of this installation, the selection of the WES turbines was based on a number of technical and logistical constraints, such as: the capacity of the RMS St Helena to transport the components; accessibility to the site via the Island's narrow and steep roads; the need for large cranes; the remote location; and the time involved in getting to the Island via ship (for bringing in spares, maintenance engineers, etc.). The selected WES turbine towers are 18m high, with two 8m long blades.

Diagram 1. Deadwood Plain Land Plots and Paddocks



7.3 During the planning for the second phase of three turbines in the early 2000s, four locations on Deadwood Plain were considered: site 1 in paddock 5/7, site 2 in paddock 6, site 3 in paddock 13

and site 4 at the lower end of paddock 12. One of the main objections to site 1 was that paddock 5/7 was integral to the Wirebird trial pasture restoration project being conducted by the St Helena National Trust.

7.4 During this site selection process, the major factors taken into account were: wind data, high voltage connection, environmental factors (i.e. natural environment, access, residents and visual impact), and costs. While sites 1 and 2 would be highly visible to residents, all four of the sites considered were within Wirebird territories and sites 3 and 4 were less accessible, with a less favourable wind climate. Ultimately, three turbines were located in paddock 5/7 (site 1) and three in paddock 6 (site 2).

7.5 Before the installation of the second six wind turbines, there was further investigation that considered other potential sites such as Frenches Gut and Horse Point to determine the wind regime. Although Frenches Gut showed good wind potential, many other financial, technical and logistical aspects ruled this site out from further consideration. The Horse Point site was considered to be too close to the Airport and was thus not considered any further.

Diagram 2: Existing Wind Turbines on Deadwood Plain

7.6 Deadwood Plain is characterised by a wide, open and exposed landscape. It is an extremely visible area which can be seen from large parts of the Island. This area is fairly unusual on St

Helena as it comprises one of the few elevated, plateau areas, lying between 490 and 550 m above sea level. The exposed and wind swept nature of this area is its defining character with the few remnant trees being heavily wind pruned. The relatively flat Plain slopes gently to the east from which a series of guts and eroded landforms extend steeply down towards the sea. However, from the upper part of the site, the land rises steeply northwards towards Flagstaff (700 m) which creates a strong focus and backdrop to views.

7.7 The SEDP strategic vision for the Island is "to achieve development which is economically, environmentally and socially sustainable by increasing standards of living and quality of life; not relying on aid payments from the UK in the longer term; whilst affording to maintain the Island's infrastructure; achieve more money coming into St Helena than going out and sustain and improve Helena's natural resources for this generation and the next."

7.8 To achieve this vision, the SEDP sets a goal to improve infrastructure by 'using tax revenue and other funding streams for investments to improve health, education, water, electricity, transport, risk management and other infrastructure'.

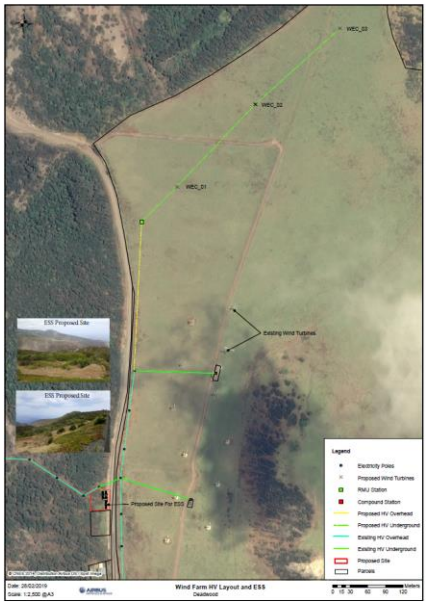
8. DETAIL OF THE DEVELOPMENT

8.1 The development application is seeking full development permission for the installation of three wind turbines of 77m height and energy storage system and associated infrastructure (overhead and underground HV cables) to generate electricity on Deadwood Plain area. The development area for the three wind turbines lies to the east of the Haul Road, upper northern part, just north of the existing wind turbines and the energy storage system to the west of the Haul Road, north of the property and in line with the third wind turbines.

Diagram 3: Location Plan

8.2 The proposed development will be located at the most northerly upper end of Deadwood Plain in paddocks 5/7, 8 and 9, as indicated in Diagram 1. They will form a straight line, placed evenly 195m apart to the west of the gravel track that runs through Deadwood Plain. This area is used for grazing of cattle and sheep on a rotational basis throughout the year in 15 paddocks. The area is fenced off and water pipelines provide water to cattle drinking troughs.

Diagram 4: Development Area



8.3 The site provides a relatively flat topography and with it, favourable upstream wind conditions with accessibility for construction and future maintenance. However, the area is also one of the most visually prominent locations on the Island; it is a valuable habitat to the endemic Wirebird; it is both a protected area of historical significance; and it is also one of the largest pastoral grazing areas on the Island. The Deadwood Plain area is also very important for tourism as it is the starting point for three of the most attractive "Post box" walks.

8.4 **Wind Turbines:** The wind turbines will stand maximum 77m in height on the plain, each with three rotary blades. The structure is a steel tower of 53.95m height, which with the hub or nacelle, gives a total height of 55.0m above ground level. Each of the three blades are 20.8m long, giving almost 34m ground clearance and a maximum height of 77m. The steel towers of the wind turbines will be in tones of green on the lower section and light grey for the upper two sections (Diagram 5) and the nacelle and fibreglass epoxy resin coated wooden blades will be painted with a low gloss grey paint. The towers have also been designed so that all the controls and the transformers are housed within the tower structure rather than having an external transformer per tower or one larger transformer for all three towers. This will reduce the overall footprint of the project.

Diagram 5: Proposed Wind Turbine

8.5 By contrast, the existing WES turbines are 18m high and the length of each of the two blades is 8m. There is some existing infrastructure (underground and over ground HV cables) that has been installed in the area over the period with the 12 wind turbines that have provided in the area. The ENERCON E-44 wind turbines design accords to European Union standards and incorporate the latest wind energy technology. The E-44 drive system comprises very few rotating components. The rotor hub and the rotor of the annular generator are directly interconnected to form one solid unit. There are no gears or other fast rotating parts and therefore the energy loss between generator and rotor as well as noise emissions are considerably reduced.

8.6 The three rotor blades are equipped with a pitch unit that consists of an electrical drive, a control system, and a dedicated emergency power supply. It limits the rotor speed and the amount of power extracted from the wind. This maximises the output of the E-44 to accurately limit nominal power, even at short notice. This pitches the rotor blades into the feathered position, the rotor is stopped without any strain on the drive train caused by the application of a mechanical brake. This is especially important during very high winds and gusty conditions. The lifespan of the turbines is 30 - 50 years. The power produced by the annular generator is fed into the distribution grid via the ENERCON grid feed system and the Energy Storage System (ESS) batteries.

8.7 The construction will require a circular concrete base of 13.90m diameter for each wind turbine. However much of this base will be covered over with soil and grassand only the top of this concrete base of 5.0m diameter on which the wind turbine will be mounted will protrude slightly out of the ground. The construction of the concrete base and the assembly of the turbine will be the major ground disruption with the transportation of the heavy goods and equipment to the site and the use of heavy machinery and cranes for the construction of the development.

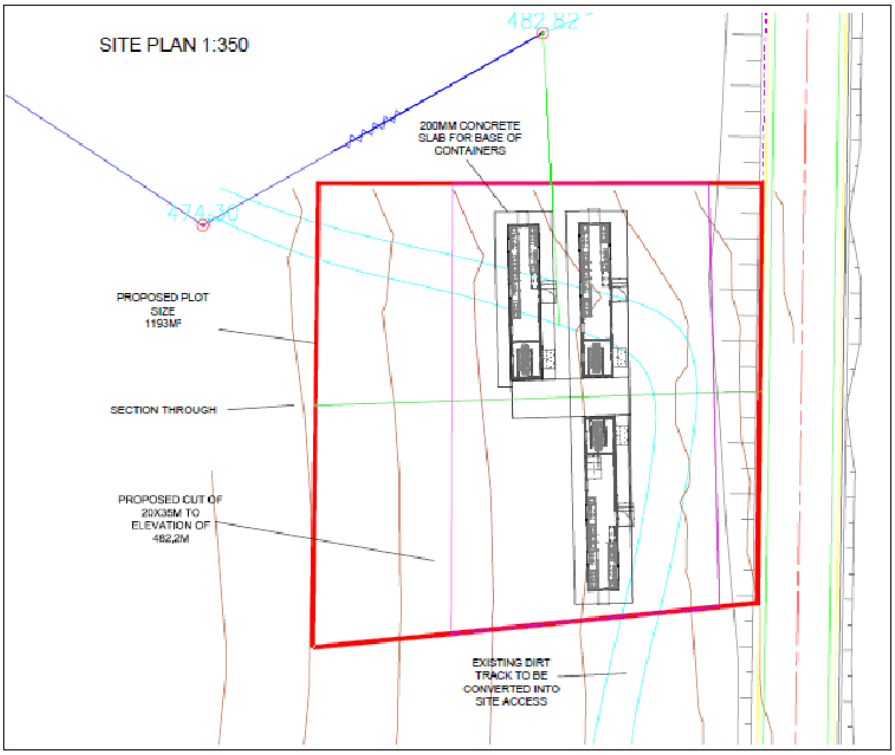
8.8 It is intended that whilst the three concrete bases will be constructed, only two wind turbines (WES_01 and WES_02) will be installed in the first instance. The third wind turbine (WES_03) will only be installed when there is sufficient demand for energy. In the future when the third wind turbine is to be installed a similar Environmental Management Plan will be adhered to. The Environmental Management Plan is a live document that will be applicable during life of the development and will be applicable for future repair and maintenance.

8.9 **Energy Storage System:** The construction of the energy storage system will be to the west of the Haul Road on Land Parcel Reference DW0072 and some 50m north of the last house along Deadwood Road (Diagram 6). The site will comprise a new plot of 1,193 sqm and part of an existing proclaimed plot (DW072) which is undeveloped.

Diagram 6: Location of the Energy Storage System

8.10 This will require a small amount of cut and fill to create a small platform for a 200mm thick concrete slab. The batteries will be housed in three linked, 40 foot custom-built containers, each equipped with its own air conditioning system (Diagram 9). The air conditioners will be housed on the back (east-facing) wall of each container and are needed to keep the temperature within each container within safe operating limits. Access to this site will be from the old Deadwood road, along an existing rough track. As the ground level at this point is below the road level, they will sit below the road level.

Diagram 7: Siting of the Energy Storage System



8.11 The power generated by the wind turbines will be fed into the existing grid system via an energy storage system (ESS) comprising lithium-ion batteries. The batteries will be able to store between 1-3 MW of electricity, allowing this to be trickled into the grid as and when needed. The life-span of the batteries is designed to be about 10 years.

Diagram 8: Site of Energy Storage System to the Local Topography

Diagram 9: The Visual Impact of the Energy Storage System

8.12 **Cabling Underground and Overground:** The proposed development will require both underground and overground cabling to link the wind turbines' Energy Storage System to the existing grid system. This will require a number of trenches to be constructed across the area. There will be a total 300sqm of land to be disturbed across the area for cabling works from the wind turbines to the ESS. All cabling across the pasture area will be underground. However, there will be an 85m extension of the pole-mounted 11 kV overhead powerline from WEC 1 (the most southern wind turbine) to the ESS and a very short link-in to the existing overhead line from the ESS (Diagram 2). This will require the erection of five standard poles into the ground along the fence line, clearance of any shrubby or woody vegetation under the powerline and within 2m of the centreline, stringing of the cables and installation of connectors, capacitors etc.

9. IMPACT OF THE DEVELOPMENT

9.1 The major impact of the proposed development, particularly the wind turbines, is during construction as the installation of the structure requires considerable ground work and the use of heavy machinery in an area that is environmentally very sensitive and would cause immense disruption and disturbance to the ecology of the area. The other major issue of concern for this project is the transportation of the machinery, equipment and instruments to the site. As an assessment of the proposed development, these issues also need to be analysed as transportation of such heavy loads can be very disruptive on the road system and the terrain that is challenging at the best of times.

9.2 The application has provided a full detailed assessment of the whole development process with the application and this has also

been assessed for the Environmental Impact Assessment (EIA) that has been submitted. The most significant negative impacts prior to mitigation being applied is during construction and these are:

1. Disruption to grazing activities on Deadwood Plain;
2. Road closures in Rupert's Valley and at the Deadwood intersection during transportation of the extra-large turbine and crane components;
3. Increased traffic volumes; and
4. Diversion of the Post Box walks during construction.

9.3 The post construction impact of the wind turbines and energy storage system is still considerable and these include:

1. Visual impacts;
2. Closure of the Airport access road between the BFI and Deadwood intersections; and
3. Impact on Wirebird populations due to general disturbance.

9.4 However such major development also provide potential benefits to the area and for a such a remote Island the benefit arising from such development can be significant and this is particularly so during the construction and includes:

1. Boost to the local economy through local procurement;
2. Employment, training and skill development of St Helenians;
3. Possible exposure of cultural heritage finds will provide an opportunity to increase our knowledge of the history of Deadwood Plain.

9.5 Much of this adverse impact and benefits arising from the proposed development has been assessed for the EIA that has been submitted with the development application. The officer assessment of the EIA and the proposed mitigations that will be put in place to safeguard against and to minimise the adverse impact and to maximise the potential benefits are set out in the latter sections of this report.

10. ENVIRONMENTAL IMPACT ASSESSMENT

10.1 The development application was accompanied by an Environment Impact Assessment (EIA) assessing the impact during the construction stage and post construction. Unfortunately, there are a number of issues with the submitted EIA, particularly with regards to the lack of more up-to-date data for the wirebird. The EIA provides a baseline on the environmental conditions and the impact of proposed development for a number of components that

may be affected in the development location. The components affected by the development include: climate, soil, topography, landscape and visual amenity, water resources, land uses, vegetation, avifauna (wirebirds), invertebrates, cultural heritage, population growth, economic growth, demand for energy supply, zero carbon emission through the use of renewable energy and moving away from fossil fuel (diesel generated power) and settlements.

10.2 The assessment relates to the impact during construction, including transporting of the heavy machinery, equipment and instruments from Rupert's Bay, where they will arrive by sea, to Deadwood Plain and the operational use post construction. The method of assessment is risk-based and assessed for following criteria:

1. Nature or type of impact (beneficial/positive, adverse/negative, direct, indirect or secondary effect and cumulative effects)
2. Magnitude of the impact (large, medium or small)
3. Extent of the impact (whole or large part of the Island, limited to Deadwood and Longwood areas or on site only)
4. Duration of the impact (persist long-term/permanent, continuous during construction or operational phases, non-continuous during construction but frequent throughout construction or operation, intermittent or occasional during construction or operation)

Table 1: Calculation of Significance

Score (magnitude + extent + duration)	Description and colour coding for adverse/negative impacts	Description and colour coding for positive/beneficial effects
±9-10	Very high significance	Very high significance
±7-8	High significance	High significance
±5-6	Moderate significance	Moderate significance
±3-4	Minor significance	Minor significance
>3	Low or negligible significance	Low or negligible significance

10.3 The impact significance is calculated by adding the scores of the criterion and the score is defined by the colour as set out in Table 1 above. The score determines the significance rating to estimate the probability or likelihood of the occurrence of the impact and the magnitude of the impact.

10.4 The probability or likelihood (definite, probable/most likely, possible/about 50% or unlikely) of occurrence of a potential impact determines the overall environmental risk or benefit. Table 2 sets out the determination of the environmental risks. The high and medium risk impacts need to be managed and the environmental management plan provides the recommended mitigation to reduce or manage the identified risks.

Table 2: Determination of Environmental Risks

	SIGNIFICANCE				
PROBABILITY	**Very high**	**High**	**Moderate**	**Minor**	**Low**
Definite	High	High	Medium	Low	Low
Probable	High	High	Medium	Low	Low
Possible	Medium	Medium	Medium	Very low	Very low
Unlikely	Medium	Medium	Low	Very low	Very low

10.5 The summary of the assessment is set out in the table below. This shows that with a level of mitigation, the impact can be reduced. It is not possible, in the majority of the cases to overcome adverse impact, but mitigation should be able to reduce the adverse impact to an acceptable level.

Table 3: Environmental Assessment (General Environmental Factors)

	Before mitigation							After mitigation						
Construction Impacts	**Mag**	**Ext**	**Dur**	**Score**	**Significance rating**	**Probability**	**Environmental risk**	**Mag**	**Ext**	**Dur**	**Score**	**Significance rating**	**Probability**	**Environmental risk**
WATER RESOURCES														
Impact of water supplies	2	3	3	8	High adverse	Definite	High	1	3	2	6	Moderate adverse	Possible	Medium
Impact on water quality	1	1	0	2	Negligible adverse	Unlikely	Very low	0	0	0	0	None	None	None
VISUAL IMPACT														
Impacts during construction	1	2	3	6	Moderate adverse	Definite	Medium	1	2	3	6	Moderate adverse	Definite	Medium
IMPACT ON GRAZING														
Disruption of grazing rotation	3	1	3	7	High adverse	Definite	High	1	1	3	5	Moderate adverse	Possible	Medium
IMPACT ON TRAFFIC														
Road closures in Rupert's	3	3	2	8	High adverse	Definite	High	2	3	1	6	Moderate adverse	Definite	Medium
Closure of airport access road	1	2	2	5	Moderate adverse	Definite	Medium	1	2	2	5	Moderate adverse	Definite	Medium
Closure of Deadwood Junction at Foxy's	3	2	2	7	High adverse	Definite	High	2	2	1	5	Moderate adverse	Definite	Medium
Closure of access track on Deadwood Plain	2	2	2	6	Moderate adverse	Probable	Medium	1	1	2	4	Minor adverse	Probable	Low
Increased traffic volumes	1	3	3	7	High adverse	Possible	Medium	1	2	2	5	Moderate adverse	Possible	Medium

10.6 The assessment shows that there are number of areas where there is high adverse impact particularly in respect of transportation of machinery and equipment to the site. However through mitigation much of this adverse impact can be reduced to a moderate level, thus reducing the level of environmental risk to medium.

10.7 The total area of ground disturbance post construction will be about 0.4ha in comparison to 10ha of disturbance during construction and covers such as noise, dust, traffic, use of equipment, etc. The typical size of a wirebird territory is up to 100sqm and therefore theoretically up to 100 pairs could be affected. However, the total Wirebird population on Deadwood Plain during the 2019 census was 41, giving a density of about one pair per 10ha. The mitigating factor is that the wirebird has been shown to be quite resilient to disturbance and the EIA states that numbers on and around the Airport construction site did not decline as predicted and wirebirds were frequently observed in the

construction areas. The Proposed mitigation (confidence in effectiveness: medium) includes:

1. Adopt the SHNT Wirebird Management Programme for the Deadwood area for the construction phase of the wind turbines;
2. Create permanent access tracks and prohibit any off-road driving;
3. Rehabilitate access tracks post construction, except as agreed with the Deadwood Syndicate and ANRD;
4. Identify legacy project between PASH and SHNT that will address challenges, threats and opportunities for successful Wirebird management on Deadwood Plain;
5. Avoid construction during the breeding season (October to February) if at all possible;
6. Impose speed restrictions on the access road across Deadwood plain;
7. Present toolbox talks to all drivers of vehicles to raise awareness of Wirebirds and the need to avoid them.

10.8 The assessment shows that the impact on the wirebird is moderate on the total population and is considered to be minor on the wirebird breeding and it is minor and with mitigation in place the impact remains the same.

Table 4: Environmental Assessment (Wirebirds)

	Before mitigation							After mitigation						
IMPACT ON WIREBIRDS														
Impact on total population	1	2	3	6	Moderate adverse	Probable	Medium	1	1	3	5	Moderate adverse	Possible	Medium
Impact on breeding	1	1	2	4	Minor adverse	Possible	Very low	1	1	2	4	Minor adverse	Possible	Very low

10.9 Cultural Heritage: Deadwood Plain has been used over the years for a number of purposes including a prisoner of war camp, a camp for the regiment guarding Napoleon and for a radio relay station. As a result, there is a strong likelihood that artefacts may be located during excavation works. This has two potential impacts: one is the disturbance and damage of *in situ* historical material, which could have a minor adverse impact on the cultural heritage value of the site, while on the other hand, unearthing such finds and having them documented adds to the body of knowledge of the subject, which can be viewed as a highly positive impact. The areas of excavation are, however so small and the location of the WECs is far from the assumed area of historical activity that the chances of finding any valuable material are low.

10.10 Recreation**:** Two of the most popular walks Post Box Walks start from the development area and would be most affected by the presence of construction, however if alternate routes are provided for the start of these walks, the impact could be reduced to

moderate significance.

The Mitigation Proposed includes:

- Post Box walks are not to be interrupted during the construction stage;
- If this is not possible, alternative temporary diversion routes are to be evaluated, discussed with SHNT and the Syndicate and implemented if necessary by the contractor.

10.11 Health: Impacts on health and safety relates to occupational activities and those which might affect the general public and these generally include: noise, dust and fumes, muscle strain, electrocution, falling from heights, blunt force trauma, etc. In an unregulated, unprofessional work site, these could prevail and result in a moderately adverse effect through multiple accidents and injuries, however, with sufficient controls in place, the provision of personal protective equipment (PPE) and other measures and these impacts can be reduced to very low risks.

10.12 The health and safety risks for the public include loud, persistent noise, presence of respirable dust, vehicle fumes and traffic accidents. If access to the site is not adequately controlled, electrocution could also present a risk to the public. With mitigation, these risks can be reduced to very low.

Table 5: Environmental Assessment (Cultural Heritage, Recreation, Health)

	Before mitigation							After mitigation						
IMPACT ON CULTURAL HERITAGE														
Disturbance of in situ artefacts	1	1	1	3	Minor adverse	Possible	Very low	1	1	1	3	Minor adverse	Possible	Very low
Increased knowledge	2	3	4	9	Very high positive	Possible	No risk	2	3	4	9	Very high positive	Possible	No risk
IMPACT ON ACCESS TO POST BOX WALKS														
Route diversions during construction	2	2	3	7	High adverse	Definite	High	1	2	2	5	Moderate adverse	Possible	Medium
HEALTH AND SAFETY														
Occupational health and safety	2	1	3	6	Moderate adverse	Probable	Medium	1	1	1	3	Minor adverse	Possible	Very low
Public health and safety	1	1	2	4	Minor adverse	Possible	Very low	1	1	1	3	Minor adverse	Unlikely	Very low

10.13 Economy: The local economy will benefit from development of the project during construction providing specialist training and employment. There will also be benefits from the increased expenditure from specialist workers that will arrive on the Island. Whist some of the specialist equipment and materials will be exported much of the construction material will be sourced locally and two local contractors have been appointed to undertake civil and electrical works which will provide employment for some 66 managers and staff for the six month construction period. This will have a high positive impact.

Table 6: Environmental Assessment (Economy)

	Before mitigation							After mitigation						
IMPACT ON ECONOMY														
Local economy/support services	3	3	4	10	Very high positive	Probable	No risk	3	3	4	10	Very high positive	Definite	No Risk
Local employment	2	3	3	8	High positive	Definite	No risk	2	3	3	8	High positive	Definite	No risk

10.14 The provision of sufficient wind energy to meet demand reduces the GHG emissions, removes the need for subsidy and will prevent energy costs rising due to external macro-economics. The importation of diesel to generate power on the Island causes three major problems: high cost of power for consumers, greenhouse gas (GHG) emissions from transportation and use of the diesel in the power station, and the dependence on UK subsidies - none of which are desirable.

10.15 The sophisticated proposed development of the WECs wind turbines will also help to stabilise the grid and reduce the number of power outages. The provision of stable, renewable power will contribute to the attractiveness of the Island for future investors. All of this will benefit the economy in a highly positive way.

Table 6: Environmental Assessment (Cheaper and Cleaner Electricity

	Before mitigation							After mitigation						
Construction Impacts	Mag	Ext	Dur	Score	Significance rating	Probability	Environ-mental risk	Mag	Ext	Dur	Score	Significance rating	Probability	Environ-mental risk
CLEANER, CHEAPER ELECTRICITY														
Benefits for customers	1	3	3	7	High positive	Possible	No risk	3	3	4	10	Very high positive	Probable	No risk
Investment benefits	1	3	3	7	High positive	Possible	No risk	2	3	3	8	High positive	Probable	No risk

10.16 Conclusion: The conclusion drawn from the EIA is that whilst there is considerable adverse impact on the natural environment locally, particularly during construction and installation of the wind turbines, the energy storage system and the cable ducting with the civil engineering process on Deadwood Plain, however through mitigation measures in place these can be reduced to a level that can be considered to be acceptable. This has been highlighted in the various tables for a number of more sensitive receptors. Similarly there are some positive benefits from the development both to the general environment with low carbon emission with renewable energy to manage climate change and to the local economy that will have more long-term benefits to the local people. Also to note that some the adverse impact on the environment is reversible through post construction mitigation and better management of the environmental.

10.17 Chief Environment Officer: The Chief Environment Officer (CEO) acknowledges that the use of wind energy to generate

electricity has many positive environmental impacts and its use should be supported for St Helena and recognises that the site at Deadwood Plain has been chosen for its optimum wind conditions is in an area that is environmentally significant and that balancing the development to meet the Island's energy needs and the environmental constraints is therefore a challenge. The CEO is concerned that there are flaws and deficiencies and that EIA does not do the development and the considerations that went into planning the development a full justice.

10.18 The CEO considers that whilst the EIA does identify the environmental impacts apparent and the method of impact assessment is very well explained, it could have benefitted from being clearer in following through from impact identification to the assessment and proposed mitigation. The identified impacts are well assessed. One of the main deficiencies in the EIA is considered to be the downplaying of the status of Deadwood Plain as a National Conservation Area - Important Wirebird Area. A more detailed baseline assessment should have been included to determine the value of the site as a wirebird habitat and the impact the development would have in terms of disturbance to and loss of wirebird habitat; further mitigation measures should also have been considered to lessen potentially adverse impacts. Similarly the disturbance to and loss of pasture land has not been fully acknowledged and assessed.

10.19 The CEO also considers that one of the main adverse impacts of the development will be the visual impact, due to the size of the wind turbines that will be highly visible from a number of locations around the Island and the need to fit lights to comply with air safety requirements; this will have further impact at night. That also mitigation proposed to lessen the visual impact will have little impact overall and it is acknowledged that very little can be done to minimise this.

11. REPRESENTATION

11.1 Representation in respect of this application has been received from the St Helena National Trust (SHNT) and a member of the public. The issues raised by these representations can be summarised as follows:

1. The EIA does not provide adequate consideration or representation of all environmental impacts of the proposed development, as the site is a NCA and of importance to wirebird and there are no references to the EPO or (NCA) in the body of the EIA text
2. Concern that the reference is to the incorrect (prior) LDCP
3. The EIA downplays the effect of the development on the

wirebird habitat, nesting as the area is designated Important for Wirebird and St Helena Plover or Wirebird (*Charadrius sanctae helenae*), is only found on St Helena and is the Island's only surviving endemic land bird: its conservation is therefore of international significance

4. the data used in the EIA is selective and potentially misleading with detrimental effect on the species' conservation, the data of Wirebird numbers on Deadwood in 2019 but makes no reference to other years, which are all higher (on average approximately 20% of total adult count on Deadwood Plain and highest at almost 37% in 2017)
5. the timing of the development works: the current timeframe appears to be scheduled over peak Wirebird nesting season, the nesting is four weeks and so questions the evidence for sustained resilience without additional safeguards
6. Absence of mention of the effect of a lack of grazing (owing to areas excluded during construction)
7. Reference to checks on invasive plant encroachment in reinstatement areas, EMP - who is responsible
8. Siting of the footings (and temporary storage of the parts) on bare ground would also lose Wirebird nesting areas
9. Lack of assessment of cumulative impacts of wider Bottom Woods construction (houses and/or prison), first two turbines, a third turbine within five years, and the decommissioning of small turbines
10. Adequate checks are carried out, crucially, BEFORE construction, and regularly throughout the area, to ensure no Wirebird disturbance, currently not recognised in the Environmental Management Plan (Section 7) and a monitoring plan for Wirebirds should be developed and implemented before contractors are onsite to avoid disturbance during their arrival
11. Provision be made before construction activities by managing an area away from the construction site, in a currently unsuitable habitat, to provide additional nesting area
12. The Postbox walks have significant amenity and tourist value and that alternative routes are made explicit and assessed for potential impacts on agriculture and Wirebird habitat and population with input from SNCG and Tourism
13. Three new ones proposed being three times taller than the existing and sited away, on the ridge below Flagstaff, their prominence will seriously affect the landscape which nothing can be done about it, their height dictates that each will be topped by two red flashing lights and this will dominate the landscape of Flagstaff from across Ihe island day and night
14. Does not include an assessment of alternative options or extension to the existing group of smaller wind turbines and

there is only a limited assessment of the affects on landscape and no assessment of the value or importance of the landscape it will affect.

11.2 Officer Response: The concerns expressed by the representations are relevant in the consideration of the development proposal and most of the points raised in the representation have been assessed in the section of the report under the Environmental Impact Assessment. It is acknowledged that there is some inconsistency in the EIA and a number of areas could have benefited with further explanation and analysis. The important thing to consider is the analysis on the number of receptors of which the impact on the wirebird is considered to be the most important due its importance to the Island. The Environmental Management Plan will provide an opportunity to ensure the wirebirds are effectively managed during the construction of the development and that there is monitoring in place pre, during and post construction. There is balance to be drawn as in the amount of land that will be lost through the development is minimal and through post development care, much of the disturbed land can be rejuvenated.

11.3 With other developments in close vicinity to Deadwood Plain, there is also a cumulative impact on the environment and again on the wirebird population on the Island. With the level of mitigation that will be in place during the construction period the adverse impact is reduced and would be considered to be of an acceptable level. In view of the assessment that has been provided it is considered that adverse impact on the environment is acceptable when also assessed against wider economic, social and environmental benefits and in particular for the environment the reduction in carbon emission and meeting climate change agenda and need to promote renewable energy to tackle climate change and shifting away from diesel fuel generated power.

12. OFFICER ASSESSMENT

12.1 The proposed development is in accordance with the overall principles and strategic aims and the policy objectives in the Land Development Control Plan (LDCP). The development of renewable energy (solar or wind) on the Island is therefore considered to be a positive move to meet with the global objectives of climate change and to reduce carbon emission. Therefore, the development of renewable energy is in compliance with the various LDCP policies against which the development has been assessed. Fundamentally, the Principle 4 is important in that the LDCP encourages and facilitates sustainable use of renewable energy and there is presumption in favour of development for sustainable power generation, including wind and solar and marine power, together with protection of areas identified as important sites for those

resources.

12.2 The proposed development is in an area that is environmentally very sensitive, particularly with its designation for wirebird conservation. It is recognised and acknowledged that there will inevitably be considerable adverse impact during the construction process with the extent of ground work that will be required to be undertaken to construct the concrete base for the installation of the wind turbines, ducting work and the construction of the six 40ft containers for the Energy Storage System. With the mitigation proposed and the Environmental Management Plan (EMP) in place, the level of adverse impact can be effectively managed and the considerably reduced. This is also considered to be short-term and there will be a number of long-term benefits that are not just economic and social but also environmental, in particular reduction in carbon emission and global objectives for climate change benefits that are likely to arise, there is need to strike balance between the negative impact and the positive benefits. Furthermore, there is also a need to assess positive impact on the environment with the likelihood of meeting number of environmental targets related to carbon emission, clean energy and climate change.

12.3 The biggest long-term concern is the visual impact and acceptability of the 77m high wind turbines in this beautiful landscape. The proposed colour treatment to the wind turbines may lessen this impact and assist with blending them into the landscape.

13. LDCA CONSIDERATION AND DECISION

13.1 There is some adverse impact on the local natural and historic environment in the area and this impact can be mitigated against through a number of conditions that will be included with development permission. There are also a number of positive social and economic benefits to the Island and its residential and business communities arising from the proposed development with improved and cleaner energy that will assist with further economic and social development of the Island.

13.2 The Chief Environmental Officer (CEO) whilst having some reservation on the EIA has raised no objection to the proposal and is in agreement with the assessment and mitigation proposed to make the proposed development acceptable in this environmentally sensitive location and that potential impact during the construction can be effectively managed with an Environmental Management Plan.

13.3 In view of the process that has been followed to ensure the development proposal is considered in light of all the available

information, the LDCA recommends to the Governor-in-Council to Grant Full Development Permission with a number of conditions, as set out Section C of the LDCA report for 15 January 2020, attached as Annex B to this Memorandum.

FINANCIAL IMPLICATIONS

14. Executive Council acts as the Planning Authority in this case.

ECONOMIC IMPLICATIONS

15. Increasing the amount of renewable energy on island, reducing reliance on diesel and encouraging improvement of distribution networks will be critical to avoid significant increases in energy costs in the future.

CONSISTENCY WITH INVESTMENT POLICY PRINCIPLES

16. The development and delivery of the development is in compliance with the Investment Policy Principles. The implementation of the development will deliver and create training and employment opportunities and has potential for further economic growth on the Island with the tourist and visitors.

The following Investment Policy principles apply:-

1. Make St Helena a desirable and competitive destination to do business by removing barriers to investment
2. Support an economy which is accessible to all potential investors and promote investments across the economy
3. Support the locally based private sector to compete in an open economy but, where possible, avoid being overly protective
4. Promote fair, consistent and transparent decision making.

PUBLIC/SOCIAL IMPACT

17. The investment arising from this development will create training and employment opportunities in the energy sector and has the potential to promote tourism industry on the Island, particularly as the delivery of a cleaner energy supply and with other developments to improve the communication sector these will improve economic activity and this will be seen as having a considerable impact in the future. The proposed development has the potential to make the Island an attractive destination for business location and promote the Island as an eco-friendly green tourist destination internationally.

ENVIRONMENTAL IMPACT

18. The investment arising from this development will create training and employment opportunities in the energy sector and has the potential to promote the tourism industry on the Island, particularly with regards to the delivery of a cleaner energy supply and with other developments to improve communication

the sector will improve economic activity and this will be seen as having a considerable impact in the future. The proposed development has the potential to make the Island an attractive destination of business location and promote the Island as an eco-friendly green tourist destination internationally.

PREVIOUS CONSULTATION/ COMMITTEE INPUT

19. The development application was advertised for a period of six weeks to seek comments from the communities and stakeholders on the development proposal.

20. During the consultation period on the development application, the applicant held a number of community consultation events on the Island to explain the proposed development and answer any queries. The applicant also made two radio broadcasts to raise awareness of the development application.

21. Key Stakeholders have responded and their views have been considered by the LDCA.

PUBLIC REACTION

22. There was representation received from the St Helena National Trust and a member of the public to the proposed development and the issues raised have been assessed and responded to in Section 11 of the report. The general response from the public to the consultation events organised by the applicant were positive.

23. This could possibly generate public and media interest once the Wind Turbine development works are completed.

PUBLICITY

24. The decision will be be covered in the radio briefing following the ExCo meeting.

SUPPORT TO STRATEGIC OBJECTIVES

25. This paper supports the Effective Infrastructure goal and Strategic Objective 1.1 – 'Ensure effective investment in physical infrastructure, including improved access to and around the Island'.

LINK TO SUSTAINABLE ECONOMIC DEVELOMENT PLAN GOALS

26. Goal 7 of the SEDP is to improve public infrastructure, to provide an environment that promotes investment.

SOB

OPEN/CLOSED AGENDA ITEM

27. Recommended for the Open Agenda.

Corporate Support
Corporate Services
30th January 2020