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No: 45/2018

Memorandum for Executive Council

SUBJECT

Application for Full Development Permission HTH Solar Farm Phases 2

Memorandum by Chief Secretary

- ADVICE SOUGHT**
1. Council is asked to consider and advise whether Full Development Permission should be granted (with conditions), as recommended by the Land Development Control Authority (LDCA), for the Installation of Phase 2 of the HTH Solar Farm using Photovoltaic (PV) System.
- BACKGROUND & CONSIDERATIONS**
2. Under Section 23 of the Land Development Control Ordinance (2013), Governor in Council acts as the determining Planning Authority, as the proposed development involves installation of Renewable Energy Generation equipment and Energy Storage equipment.
 3. The Solar Farm will be similar to that implemented during Phase 1, consisting of:
 - a) Solar Panels: Non-reflective PV Panels arranged as arrays to be raised from the ground on structures at approximately 12 degrees from the horizontal;
 - b) Associated Equipment and Infrastructure: there are currently two 20ft containers on site, installed during Phase 1, with one housing 8 Inverters and air conditioning units to keep them cool and the second housing a 1.2MW Transformer. These were installed to serve the first 0.5 MWp Solar PV Farm.
 - c) A third 20ft Container will be installed as part of Phase 2, which would house eight additional Inverters and associated air conditioning units. The 1.2MW Transformer installed during Phase 1, was sized larger than required to provide seamless integration of Phase 2, hence there is no need for the upgrading or an additional Transformer for Phase 2. Other than this, there will not be any further bulk electricity infrastructure to be provided.
 - d) Security Fencing: Installation of 1.8m high fencing.

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4. The Chief Planning Officer's (CPO) Report of June 2018 is attached at Annex 1 and deals with the following key material considerations as supported by the Land Development Control Plan (2012).

Planning History

5. The site was previously used as a Rifle Range but was earmarked for purposes of a Solar Farm through various Planning Requests.
6. An Outline Development Permission (ODP) was granted by Executive Council for all areas (including Phases 1, 2, 3 and 4) at the Executive Council meeting held on 14th October 2014. Full Planning Permission (FPP) was subsequently granted for Phase 1 by Executive Council at a meeting held on 18 December 2014 and accordingly implemented.
7. As Outline Development Permission only endures for a period of 1 year, the approval given by Executive Council on 14th October 2014 for Phases 2, 3 and 4 has since lapsed and therefore requires reconsideration.
8. Outline Development Permission was granted (with conditions) by Executive Council for Phase 2 on the 6th September 2016 (note on 3rd October 2016 as stated in the Planning Officer's report of June 2018) inclusive of additional wings of land to enable an improved and more compact layout of the Panels.
9. As this is a request for Full Development Permission for Phase 2, Design & Implementation details were provided, including a comprehensive Glare Risk Assessment.

Applicant's Motivation

10. Motivation for Extended Solar Farm at this Location:
 - a) Previously proven benefit of the location (See paragraph 8 below);
 - b) Existing and established support infrastructure;
 - c) Recognised attributes and outcomes of development on this particular site due to previous implementation;
 - d) The preferred bidders (PASH) – Renewable Energy Consultants, are in support of this particular site for Phase 2 implementation.
11. Following initial site comparisons and the pros and cons of various locations weighed, the applicant established and motivated during the initial Outline Application and Full Application (as was approved for Phase 1) that this is the optimal

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location for Solar Farm siting, as it met the following key requirements:

- a) North-facing orientation;
- b) Most days of sunshine;
- c) Proximity to High Voltage network - resulting in cost effectiveness;
- d) Access to land – i.e. Government owned;
- e) The site was already impacted upon – previously Rifle Range area;
- f) Not a sensitive environmental location – for example primary wirebird conservation area (ecological survey of site at Half Tree Hollow conducted); and
- g) Not potentially affecting airport operations.

Solar Farm Extent

12. Existing: The following provides an outline of the existing Solar Farm extent and output (as developed) - Phase 1:
 - a) Area ± 1.8 acres (7,284m²);
 - b) Panels: 1,962
 - c) Power Generation 0.5 MWp
13. Phases 2 Attributes: will be similar than indicated in Phase 1 above and will benefit to some extent from existing support infrastructure that is already installed.
14. Implementation Framework: the developer (PASH / Connect) is desirous to implement within the near future.
15. Note that as Photovoltaic Panels only work during the day there might be the need for investment in storage capacity or else further reliance to some extent on other energy generation options.

Public Representation

16. No objections were received from general public (including households in the vicinity of the existing Phase 1 Solar Farm or greater HTH).

Material Considerations & Conclusions

17. Retrospection: Implemented Phase 1 provides some reference to base the eventual implications of this application upon, which can be beneficial.
18. Problem Statement: Do the benefits from Solar Power Generation at this location outweigh the potential negative visual

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impact and loss of land for residential, businesses and commerce that might otherwise be located on this land?

19. **Key Assumption:** The siting of Renewable Energy Equipment such as Photovoltaic Panels and land-based Wind Turbines on a large scale requires significant land areas and subject to a very specific site, infrastructure and climatic attributes to ensure optimisation thereof. This in itself is challenging on a small and mountainous island where developable land is a scarce resource.
20. The following aspects can be regarded Material Considerations and have been summarised in short:
- a) Land Resource: this is an undertaking which requires significant land area for development - a continual portion of land area with similar attributes across the area is necessary for the successful undertaking.
 - b) Competing Land Uses: there is a trade-off between various potential uses over the land and the question remains, which gets priority over the other. It can be argued that areas for successful featuring of solar panels are potentially fewer (due to the need of meeting various very specific requirements) than land potentially suitable for residential development (which can be accommodated at a much wider range of topographic locations).
 - c) Urban Sprawl: from a planning perspective it is desirable to concentrate housing and related development to discourage urban sprawl – therefore the motivation to concentrate the housing sector primarily within the Intermediate Zones, within concentrated nodes such as HTH – this development however falls off the periphery of the Intermediate Zone – where development is more unlikely – given also the existing Phase 1 Solar Farm.
 - d) Land Availability: a portion of Crown Land or leased land owned by the Applicant is required to potentially render the development feasible and cost effective – which in this case belongs to the Crown and earmarked already for purpose of the Solar Farm.
 - e) Land Accessibility: there is an existing track serving this area which is suitable for construction and later maintenance purposes – the track will be realigned to ensure optimum use of the site – however with no impact on other development or the community at large.
 - f) Visual Impact: solar farms are generally not aesthetically

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pleasing. However, the aspect of “visual impact” can potentially be of similar significance on any other site elsewhere - impacting another community or individuals or even sites of historic and environmental importance – in which case this has not impacted on the latter.

- g) Risk of Glare: a Report on Glare was submitted and indicated a mere Risk of around 2%. PASH, being a significant international competitor in the field of Renewable Energy, also proposes to make use of the latest (cost effective) “dimpled” panels which will mitigate against impacts of reflection. Note also that the panels face northwards (towards the ocean and away from residential areas) at a 12 degree gradient. In addition, photovoltaic panels are meant to absorb sunlight rather than reflect sunlight, and as such this is regarded a low risk as also proved by the implementation of Phase 1.
- h) Existing Invested Infrastructure: there is existing support infrastructure already on site, road upgraded, etc. which are strengths that can be built upon. The concept of Economies-of-Scale apply in this regard where there are cost advantages due to size, output, or scale of the operation, with cost per unit of output generally decreasing with increasing scale, as fixed costs are spread out over more units of output.
- i) Orientation: this site lends itself to correct north-facing angle with a slight gradient to optimise the reception of sunlight.
- j) Environmental Benefits: there is the potential of reduced emissions from the diesel generators.
- k) Energy Security & Renewable Resource: the sun is a significant renewable resource with this site providing optimum days of sunlight per year.
- l) Resultant Additional Infrastructure: as photovoltaic panels only work during the day there might be the need for investment in storage capacity or else further reliance to some extent on other energy generation options.
- m) Legislation: the development application is determined to be consistent with the Policies and Strategy set out under the adopted Land Development Control Plan and earlier decisions made by the Authority and the Governor in Council.

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- n) Previous Planning Efforts: previous planning decisions underpin the Full Application (Phase 1) and Outline Development Permission for Phase 2.

CPO & LDCA Recommendation

21. The LDCA recommended Full Development Permission be granted subject to Planning Conditions (attached in their Letter of Recommendation). Reasons for approval being:

- a) No objection received from occupiers of adjacent and nearby property;
- b) No objections received from Crown Estates as landowner;
- c) Previous principle approval of the site by LDCA and Governor-in-Council;
- d) No unfavourable material grounds from both a physical planning and legislative perspective.

FINANCIAL IMPLICATIONS

22. In considering this Development Application, Council acts as a Planning Authority and is not concerned with the financial aspects of the proposed development.

23. Due to the site being merely an extension of a previously developed site for the same purpose and requiring minimal grid connection costs, securing further funding will be simplified.

ECONOMIC IMPLICATIONS

24. The proposal will have a positive economic impact as energy generation can over time become less dependent on expensive diesel fuel and the generators will no longer need to run 24 hours a day. Fuel is currently the single biggest import to St Helena. Savings will in the first instance result in a reduction of SHG subsidy, which will allow SHG to redistribute budget to other areas in need. Savings can then be used to reinvest in cost saving infrastructure or in unit cost reductions to which there would be a benefit to individual households and businesses alike.

25. The capital cost of installing Phase 2 will be reduced by utilising this specific site, as it has in part been provided with bulk infrastructure and other support amenities during Phase 1.

CONSISTENCY WITH INVESTMENT POLICY PRINCIPLES

26. The proposal is consistent with the following Investment Policy principles:

- i) *Make Saint Helena a desirable and competitive destination to do business by removing barriers to investment.*
- ii) *Support an economy which is accessible to all potential*

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investors and promote investments across the economy.

iii) Support the locally based private sector to compete in an open economy but, where possible, avoid being overly protective.

iv) Promote fair, consistent, timely and transparent decision making.

PUBLIC / SOCIAL IMPACT

27. There may be negative impact due to the large scale of visually unappealing panels but this is not evidenced by community objections to the Application. This does need to be weighed against the need to develop more renewable energy that will have a positive socio-economic impact for the whole island, as the island moves towards harvesting more green energy and reducing reliance on fossil fuel.
28. The island has some of the highest electricity tariffs in the world and any move to reduce these costs for households and businesses will be seen as progressive, even though this may take some time to come to fruition.

ENVIRONMENTAL AND LAND USE IMPACTS

29. The principle of this development i.e. extending the existing solar farm to further contribute to an alternative means of generating electricity, will have positive environmental impacts through reducing the use of diesel fuel and hence the island's carbon footprint.
30. Power Generation will be in close proximity to current bulk electricity networks and within proximity to one of the major developed and growth areas on the island, thus not requiring installation of further networks, such as major overhead electricity cables, etc.
31. It was noted that the proposed development is in an area that could have been used for other commercial and or residential development. Given the development of Phase 1 of the Solar Farm on this site however the opportunity has been forgone already, as development is unlikely to occur up to the boundary of the Solar Farm (Phase 1). Note also, that due to the ridge / natural embankment (as discussed above), causing a natural elevation difference, land behind (south of) Phase 1 is unlikely to be developed otherwise, which will potentially cause it to remain unused in any event.
32. The Phase 1 application included an ecological survey; this determined that the wirebird and some endemic invertebrate species were found to be on the site. It is noted that a large part of the biodiversity was found in the Southern Rocks area during

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this survey. This area was not affected by the Phase 1 works and it was established that it is unlikely to be affected by the Phase 2 development. As such, the Applicant will only be required to investigate and modify the Report to include the areas (two wings of land) which were not initially included. If endemic species are found to be present, the siting of the panels should ideally avoid sensitive areas; if this is not possible appropriate mitigation should be designed and implemented.

33. It should be noted that if listed protected species as per Schedule 2 of the Environmental Protection Ordinance (EPO) are found on site and could potentially be affected by the development, this would be a contravention of the EPO Sections 20 and 21 prohibitions, relating to protected plants and animals and as such the Applicant would need to apply for (and be issued with) a licence as per Section 27 of the EPO, prior to works commencing on site.
34. The proposal requires minimal excavation and as such will not have a negative impact on the natural slope and grading of the land. This will have a benefit in future should the solar farm be made redundant and some other form of development implemented.
35. The Chief Environmental Officer through the planning consultation process, recommended to the Chief Planning Officer that the existing Ecological Survey conducted for the extended site (during the Phase 1 implementation), be slightly adapted to also include the addition of the two wings. Wirebird Breeding Mitigation during construction/ implementation of Phase 2 will be similar as during implementation of Phase 1.
36. Part of the application site is owned by Crown Estates and transfer will be completed following approval of the Full Development Permission as negotiated between the Crown Estates Officer and the Applicant following Outline Planning Approval.
37. The application was presented to the LDCA which recommends Approval with Conditions similar to Phase 1 implementation for the sake of consistency and given the similar site and project attributes.
38. The application was advertised in Local Newspapers (9 & 10 November 2017) and a notice displayed in accordance with regulations for a period of 14 days.

PREVIOUS CONSULTATION / COMMITTEE INPUT

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PUBLIC REACTION

39. No objections were received from the general public and stakeholders including the HTH community living in close proximity to the existing Phase 1 Solar Farm Site.

PUBLICITY

40. The decision will be mentioned in the ExCo Report and associated radio broadcast. The applicant will be formally advised of the decision.

SUPPORT TO STRATEGIC OBJECTIVES

41. This paper supports Strategic Objective 5.1 - Generating more energy from renewable sources.

LINK TO SUSTAINABLE ECONOMIC DEVELOPMENT PLAN GOALS

42. This paper supports the SEDP through Goal 7, "*Improve infrastructure - Using tax revenue and other funding streams for investments to improve electricity.*"

SO'B

OPEN /CLOSED AGENDA ITEM

43. Recommended for discussion in Open Session.

Corporate Services
The Castle

6 August 2018

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