



# ST HELENA AIRPORT

Permanent Electricity Supply to the Airport

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## Executive Summary

Planning consent is sought from Governor in Council to amend the original development consent granted for the Airport Project to reflect the revised design presented in this paper for the permanent electricity supply to the airport. The application is made in accordance with Section 8 of the Airport Development Ordinance (2008) see above.

This document outlines the guiding contractual and legislative requirements on which the design of the permanent electricity supply to the airport has been based. Key considerations are:

- The Land Planning and Control Plan (2012) stipulates that except in the National Conservation Areas (NCA), development permission will be granted for the erection of high voltage and low voltage overhead distribution cables provided that they are sited to minimize the impact on the landscape. The existing temporary electricity route falls within the NCA.
- The Design, Build, Operate and Handback Contract, the Environmental Statement and the Environment Management plan for the St Helena Airport Project all stipulate that services should be installed underground.
- Air Safety Support International (ASSI) which regulates civil aviation safety in the UK Overseas Territories sets conditions to prevent infringement upon the Obstacle Limitation Surface (OLS) around the airport. This process is known as “safeguarding” and is designed to take the measures necessary to ensure the safety of aircraft and the passengers and crews aboard them, while taking-off or landing, or while flying in the vicinity of an airport.

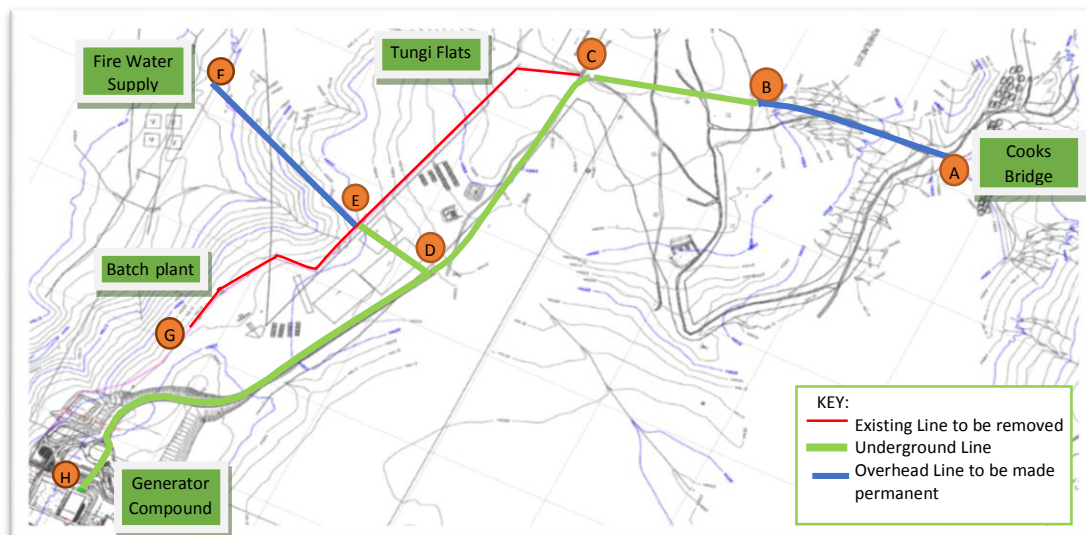
In 2012, Governor in Council gave consent for the installation of a temporary electricity supply to the airport site. Governor in Council requested that a recommendation be returned for a decision regarding the permanent electricity supply to the airport.

A lengthy options appraisal has been carried out to design the permanent electricity supply to the airport. The design presented here is the option that meets all of the requirements discussed above.

To comply with the contractual obligations it is recommended that a portion of the temporary line is removed and replaced with underground cabling.

Development Consent is requested for sections of overhead lines from points A to B and E to F to be made permanent and for points B to G of the overhead temporary lines to be removed and replaced with underground cabling running from points B to H as highlighted within the document.

Map showing existing temporary line to be removed, overhead and underground sections.



## 1. Introduction

The purpose of this document is to review the route for the permanent electricity supply to the airport. The temporary electricity supply was the subject of earlier development consent by Governor in Council. At Governor in Council's request an application for the permanent electricity supply to the airport is being submitted for development consent.

The appraisal is based upon:

- Key legislative and contractual requirements;
- Key technical considerations;
- Key environmental considerations;
- Key financial considerations; and
- Other constraints.

The appraisal seeks to provide the optimal solution whilst factoring in all of the above elements. Whilst the paper has been collated by the SHG Access Office, SHG's lead on the Airport Project, the advice and technical expertise contained herein has been obtained from:

- the Project Management Unit (PMU) i.e. the Resident Engineer and his team for the Airport Project;
- Basil Read i.e. the Contractor for the Project;
- Connect Saint Helena i.e. the service provider; and
- Environmental Management Division i.e. SHG's lead on environmental matters.

Part 2 below provides the relevant background and assumptions on which an options appraisal was prepared. Part 3 then provides the recommended design for the permanent electricity supply to the airport, this being the design that complies with the regulatory and design requirements set out below.

## 2. Background & Assumptions

### Context

The Exchange of Letters between SHG and DFID (November 2011) states:

***"Airport power line for Phase 2 Operations – a 500KV<sub>a</sub> power line from Bradley's Garage will be installed by SHG and will be available to the Contractor as the primary source of power for Phase 2 Operations."***

Exchange of Letters, November 2011, Appendix B.

It should be noted that subsequently there has been an agreed design change within the Airport Project that there should be an upgrade to a 750KV<sub>a</sub> power line.

The above sets out SHG's contractual obligation to provide the electricity supply to the airport. Discussions with the Resident Engineer in the PMU confirm that SHG must provide the supply to a termination point at the Generator Compound at the airport buildings site (near to the Combined Building). The Resident Engineer has confirmed that the Contractor is responsible for all electrical infrastructure at the airport site after this point.

The Design, Build, Operate and Handover Contract with Basil Read clearly specifies that the Contractor is responsible for all other electrical infrastructure (e.g. to remote obstacle lighting and navigational aids, etc). The Contract states:

*“The Contractor shall be responsible for the supply, installation and termination of all power and fibre optic cable connections to each of the equipment sites...”*

Vol. 3b, Section 10.2.1

SHG is therefore only responsible for the electricity supply to the airport site at the termination point identified by the Resident Engineer above.

### Work to Date

In 2012 Governor in Council granted development consent for the temporary electricity supply to be provided to the Airport construction site through a combination of overhead lines and underground cables on the basis that a review would be undertaken of the final designs once these became available.

It was recognised at the time that the design for the temporary electricity supply was not optimal. However, Governor in Council granted development consent on the condition *that this would be temporary* and requested that a proposal be returned to Governor in Council for a decision on the permanent electricity supply to the airport.

A final decision on the route options is now required to enable other service infrastructure to be designed and installed.

### Legislative and Contractual Framework

There are several documents that underpin the design for the permanent electricity supply to the airport. These include:

- Land Development Control Plan (LDCP) (2012)
- Airport Development Ordinance (2008)
- Exchange of Letters (2011)
- Volume 3b of the Design, Build, Operate and Handback Contract with Basil Read (Nov 2011) [hereafter the DBO Contract]
- Environmental Statement (2007). This forms part of the DBO Contract
- Environmental Management Plan (2011). This forms part of the DBO Contract
- OTAR 139 Certification of Aerodromes – Appendix C

The relevant extracts from these documents are shown in Appendix 1. The table below summarises the key points from each of these documents.

Document	Summary
Land Development Control Plan (LDCP) (2012)	<ul style="list-style-type: none"><li>• Development permission will not be granted for development likely to prejudice any aspect of construction or operation of the airport, including development conflicting with protection afforded to the obstacle limitation areas, or any element of infrastructure associated with the airport</li><li>• Except in the National Conservation Areas, development permission will be granted for the erection of high voltage and low voltage overhead distribution cables provided that they are sited to minimize the impact on the landscape. In</li></ul>

Document	Summary
	Comprehensive Development Areas, Coastal Village Areas and Historic Conservation areas, the low voltage network will be required to be laid underground in accordance with the development design briefs and management plans for those areas.
<b>Airport Development Ordinance (2008)</b>	Nothing done in an Airport Development Area with the consent of the Governor in Council shall be held to be in contravention of the Land Planning and Development Control Ordinance.  As such, the Airport Development Ordinance takes precedence over the Land Development Control Plan.
<b>Exchange of Letters (2011)</b>	An Airport power line for Phase 2 Operations – a 500KVa power line from Bradley’s Garage will be installed by SHG and will be available to the Contractor as the primary source of power for Phase 2 Operations.
<b>The Design, Build, Operate and Handback Contract (Nov 2011)</b>	This provides the specification for the electricity supply. In addition to technical specifications, there are environmental considerations, including the specification that in as far as possible all service routes shall avoid sensitive sites including ecological and heritage features as defined in the EMP.
<b>Environmental Statement (2007)</b>	This presents the Environmental Impact Assessment for the Airport Project. The ES is written on the basis that: <ul style="list-style-type: none"> <li>- The St Helena Airport and Supporting Infrastructure project must meet the highest possible standards of environmental management; and</li> <li>- Notwithstanding the law on St Helena, the EIA and planning submission are defensible in terms of the normal expectations of the planning process in the United Kingdom (UK).</li> </ul>
<b>Environmental Management Plan (2011)</b>	Land take should be minimised whilst achieving construction and maintenance objectives. All new power supplies should be routed below ground in sensitive and visually intrusive locations.
<b>Planning Statement for the Airport Project (approved by Governor in Council in September 2008)</b>	This notes that there is an assumption that there would be no overhead cables in the Prosperous Bay Plain National Protected Area.
<b>OTAR<sup>1</sup> 139 Certification of Aerodromes</b>	The OTAR stipulates that Aerodromes must be safeguarded and as such infringements to the OLS must be approved by ASSI.

<sup>1</sup> OTARs – Overseas Territories Aviation Requirement. These set out the legislative requirements for aviation in the Overseas Territories.

From all of the above contractual and legislative documents we can conclude that, given the environmentally sensitive location, the requirement is for the electricity line to be installed underground; only in exceptional circumstances should overhead electricity lines be considered.

This application is made in accordance with Section 8 of the Airport Development Ordinance (2008) see above.

## Constraints

### Timing

It is essential that a permanent electricity supply for the airport is installed by July 2014 to enable the Navigational Aids for the airport to be functional by August 2014.

This is in accordance with the Airport Project Programme (V4) under the Airport DBO contract.

A decision is required by 15 May 2014 to enable designs to be finalised and materials sourced for installation.

### Technical

Volume 3b, Section 5 of the Airport DBO Contract sets out the technical specifications for electricity supplies under the Airport Project. In order to meet these specifications, technical options are limited to whether lines should be overhead or underground. The key considerations are shown in the table below.

	Underground	Over ground
<b>Obstacle Limitation Surface</b>	No risk	Poles penetrate the OLS
<b>Procurement</b>	Order & delivery time required	Resources in stock
<b>Financial</b>	Higher cost for materials and installation	Lower cost for materials and installation
	Additional cost of existing line removal	
<b>Location</b>	Majority of route in disturbed area near the haul road	Temporary lines in place, new lines proposed on undisturbed ground
<b>Installation</b>	Trenching	Majority of network in place
	Existing lines to be removed	High impact to undisturbed area
<b>Operational</b>		Corrosion from weather
<b>Maintenance</b>	Less susceptible of faults	More susceptible to faults
	Faults are difficult to locate and repair	Faults easier to locate and repair
	Faults will require excavation	

	Underground	Over ground
Environmental Impact	Negligible impact in existing construction areas	Significant disturbance to endemic species during installation and maintenance
Visual	No visual impact	High visual impact on the Southern Plateau, particularly in the Tungi Flats area

As noted previously, the environmental sensitivities (see below) dictate that lines should be underground wherever possible.

A further key technical specification relates to “safeguarding”. ASSI defines this as follows:

*The word "Safeguard" relates to a circumstance that can prevent something undesirable, while an "Aerodrome" is a defined area where aircraft can land, take-off, taxi or park, and includes airfields, airports, heliports, etc. The purpose of Aerodrome Safeguarding is to take the measures necessary to ensure the safety of aircraft and the passengers and crews aboard them, while taking-off or landing, or while flying in the vicinity of an aerodrome.*

*This is achieved by a process of checking proposed developments so as to:*

- *protect the blocks of air through which aircraft fly, by preventing penetration of surfaces created to identify their lower limits;*
- *protect the integrity of radar and other electronic aids to air navigation, by preventing reflections and diffractions of the radio signals involved;*
- *protect visual aids, such as Approach and Runway lighting, by preventing them from being obscured, or preventing the installation of other lights which could be confused for them;*
- *avoid any increase in the risk to aircraft of a bird strike by preventing an increase in hazardous bird species in the vicinity of the aerodrome and, whenever the opportunity arises, to reduce the level of risk.*

[www.airsafety.aero](http://www.airsafety.aero)

The first bullet point above, relating to infringement of the Obstacle Limitation Surface (OLS) around the airport, is particularly relevant to the design of the electricity supply.

## Environmental

### General

Volume 3a, Section 1.12 of the Airport DBO Contract sets out the environmental requirements of the project. These are contained within the Environmental Statement (2007) [hereafter the ES] and the Environmental Management Plan (2011) [hereafter the EMP]. Both documents form addenda to the Airport DBO Contract and thus have contractual status.

The ES sets out the Environmental Impact Assessment for the Airport Project. As noted in the summary above, the Airport Project is required to meet the highest possible standards for Environmental Management.

The EMP sets out the commitments and contractually binding measures to avoid, reduce or offset the environmental effects. It translates the ES into operation.



The importance of the ES and EMP must not be underestimated. These documents form part of the Airport DBO Contract which has been approved by Governor in Council in St Helena and by the Department for International Development (DFID) in order to secure the release of DFID donor funding for the Airport. SHG and DFID have agreed within the Exchange of Letters (November 2011) that SHG will do everything possible to facilitate the delivery of the Airport Project.

The ES and EMP must also be considered in the context that the airport site has been identified as an area of high environmental sensitivity. As a major project, under the UK Major Projects Authority, and with the environmental sensitivities in mind, the Airport Project has been the subject of intense scrutiny from local and international lobby groups, resulting in parliamentary questions and the Minister of State being drawn into matters such as this.

Appendix 1 extracts the relevant sections of the ES and EMP and sets out the conditions that must be complied with. The section below provides an overall summary.

### Specific Requirements

The route of the existing temporary overhead lines run across an area identified as the Southern Plateau in the Environmental statement. (Section 9.3.5.1)

Wirebirds inhabit the area and both endemic and native plant species populate the site. The assessments carried out in the ES identify these areas as having 'high' environmental significance. Relevant extracts are given in Appendix 1.

Prosperous Bay Plain is identified in the ES and EMP as a sensitive environmental site and as a site of key environmental significance. As such, under Volume 3B of the Design, Build, Operate and Handback Contract, all service routes shall avoid sensitive sites.

The visual impact of the lines along the Southern Plateau, particularly the Tungi Flats area is quite significant. Fig 4 shows some of this impact. Section 4.2.5.23 of the EMP states that "all new power supplies shall be routed below ground in sensitive and visually intrusive locations."

### 3. Recommended Option

#### Review of Existing Lines

Approval for the existing temporary lines was awarded in October 2012 with a view to review these.

Whilst the lines are overhead to a certain point, this was due to agreement that they would be temporary and that the matter would be reassessed at this point.

Fig 1. Photo taken from the Road to the Millennium Forest of the electricity lines running from Cooks Bridge to the top of Tungji Flats

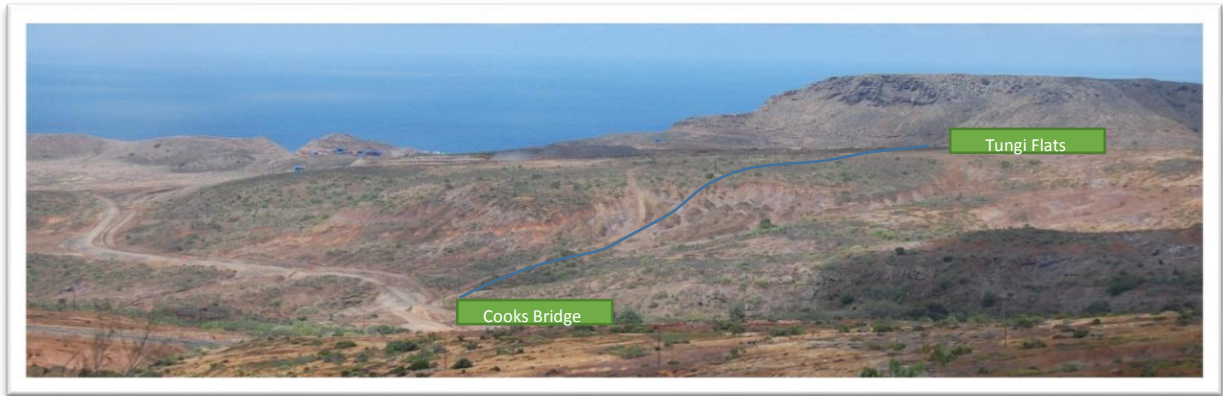


Fig 2. Photo taken from the Access road of electricity lines running up from Cooks Bridge to the top of Tungji Flats

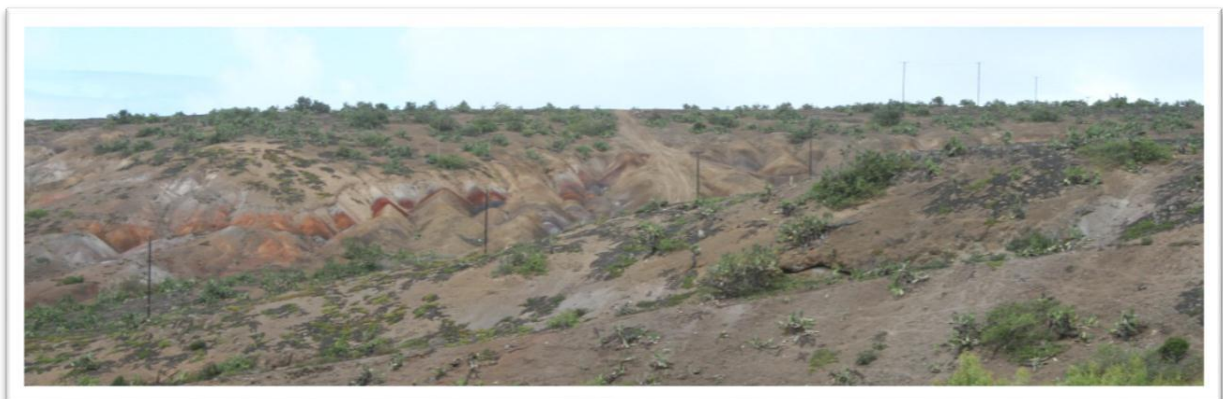


Fig 3. Photo taken from the Airport Access Road at the top of Tungji Flats showing electricity lines coming over the hill from Cooks Bridge



# Permanent Electricity Supply to the Airport May 2014

Fig 4. Photo taken from the Airport Access Road at Tungi Flats following the electricity lines towards the Airport Site



Fig 5. Photo looking towards Tungi Flats showing the continuation of the electricity lines down to the area of the batch plant. (Travelling from Airport Site)



Fig 6. Photo taken from the Airport Access Road looking down to the Batch Plant area. (Travelling towards Airport Site)



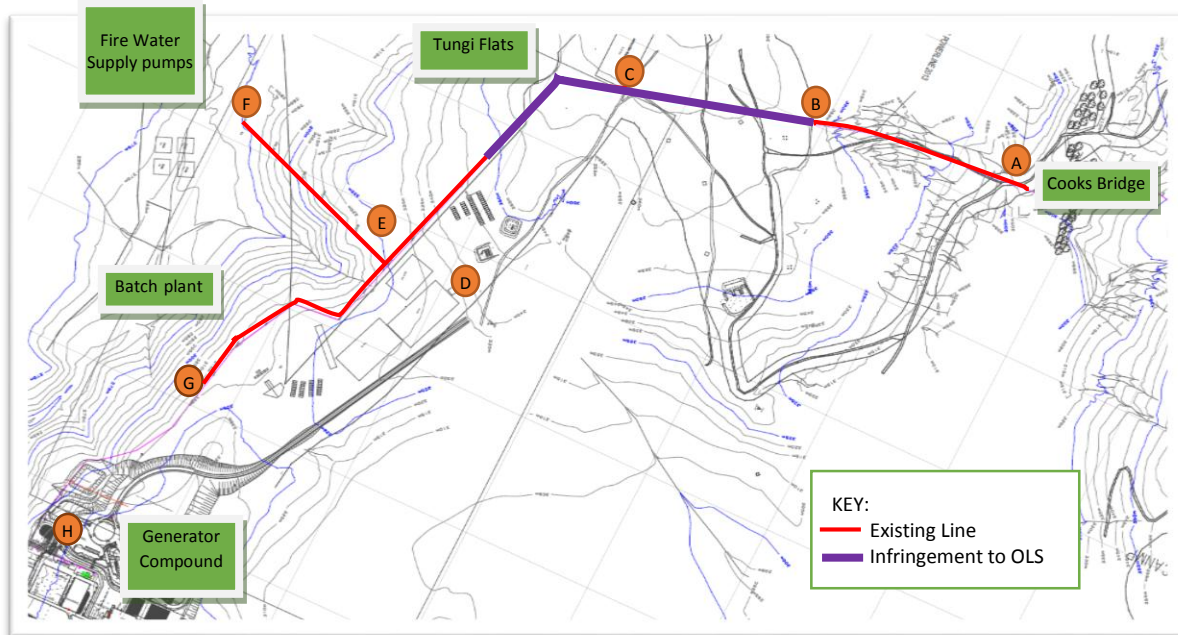
Fig 7 below shows a section of the electricity lines between Cooks Bridge and Bradleys. It should be noted that planning approval has already been given for these.





The existing temporary lines shown above run along the line from point (A) to the Batch Plant and the Fire Water Supply Pumps shown in the diagram below.

Fig 8. Map showing existing situation and infringement into OLS



### Environmental & Technical Appraisal

The section from Cooks Bridge (A) to (B) travels up an area of eroded gullies and the lines are not prominent. (Fig 1-2). Trenching works here would cause greater environmental disturbance than the existing overhead lines do. It is therefore recommended that this section of overhead line is retained.

At point (B) the lines reach the hill crest and become visually intrusive, it is also at this point that they infringe the OLS. This infringement includes 11 of the 13 poles between point (B) to point (E) on the above diagram

Any infringement into the Obstacle Limitation Surface must be approved by ASSI; whilst natural features are likely to be granted exemptions assuming the flight path around these is safe, built structures in close proximity to the centre of the OLS are not. There are clear precedents, e.g. Montserrat airport which demonstrate this.

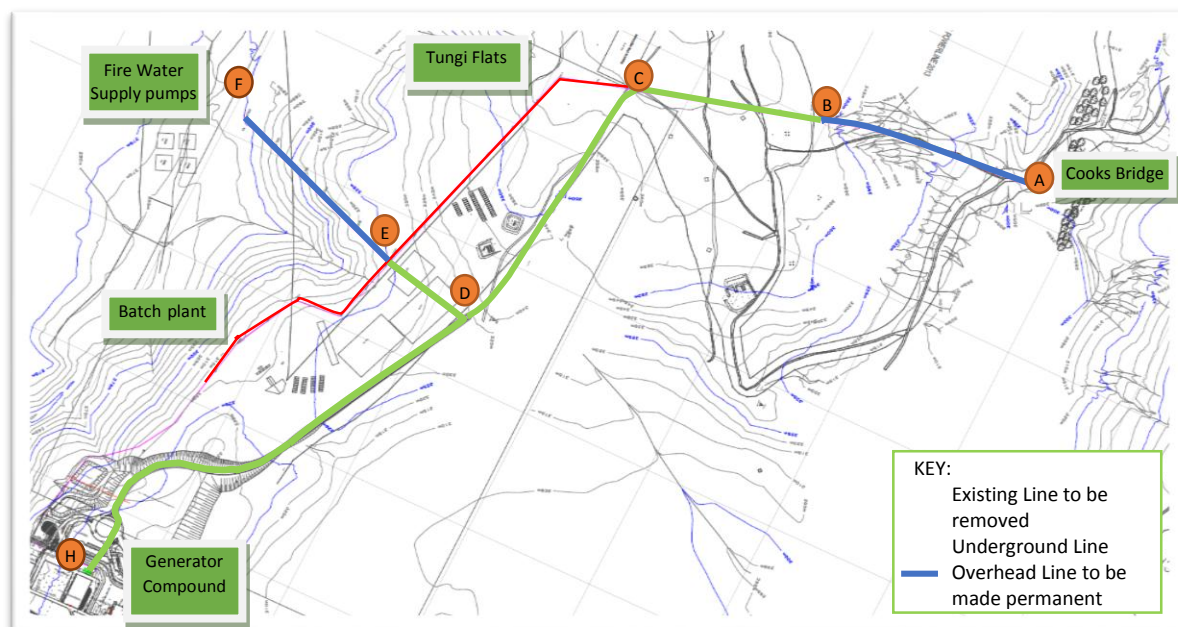
From point (E) the temporary line currently branches down into Dry Gut where it terminates as point (F). Like the section from (A) to (B) trenching here would have an environmental impact as relatively untouched ground would be disturbed by digging trenches for the supply to go underground.

Point (E) to (G) runs behind the Batch Plant and Stockpile area (Fig 6) this area will be extensively rehabilitated as construction works conclude. The removal of lines from this point will ensure that this rehabilitated area is not disturbed for future line maintenance.

## Options

In compliance with the environmental and technical considerations necessary it is proposed that the electricity supply to the Airport site is installed underground from point B on the diagram below.

Fig 9. Map showing existing temporary line to be removed, overhead and underground sections.



The proposed underground route would follow the existing overhead line from (B) to (C) at which point it would link with the trenching for other services along the Airport road terminating at the generator compound (H). At point (D) the line diverts to connect to the existing overhead lines into Dry Gut at point (E). The route is identified by the green line on the diagram above.

### Environmental and Technical Appraisal

This proposed route complies with the Airport Project contractual and legislative obligations that lines should run underground in sensitive and visually intrusive locations

*4.2.5.23 All new power supplies shall be routed below ground in sensitive and visually intrusive locations.*

EMP 2011

The visual impact of the electricity lines shown in Fig. 4, 5 & 6 is removed and the need for any new disturbance to both plant and wirebirds for maintenance purposes along the current temporary overhead route is also eliminated.

This route also complies with the Safeguarding process and removes the infringement to the OLS.

## Consultations

Professional opinions were sought from PMU on the environmental and technical aspects of the project and they approve of the selected route.

CSH have advised that there is no preference between the overhead and underground option from their perspective. Overhead is obviously cheaper and also easier to fault find however if the lines are buried the likelihood of having faults is reduced.

CSH and Capital Programme Group were consulted about funding availability

No external consultation has been carried out as this is a follow up to an earlier decision by Governor in Council.

## Recommendations

Following careful examination of the options available, the proposed route is most in keeping with the legislative and contractual requirements, both from the technical aspects of the contract and from the environmental management perspective within the Airport Project Environmental Statement and the Environmental Management Plan.

The Airport Project's recommendation to Governor in Council is therefore that the Airport Project should proceed with the proposed route for the electricity supply to the airport.

## Appendix 1: Extracts from Key Documents

### **Land Development Control Plan (LDCP)**

*"Except in the National Conservation Areas, development permission will be granted for the erection of high voltage and low voltage overhead distribution cables provided that they are sited to minimize the impact on the landscape. In Comprehensive Development Areas, Coastal Village Areas and Historic Conservation areas, the low voltage network will be required to be laid underground in accordance with the development design briefs and management plans for those areas"*

The majority of the route falls within the Coastal Zone with portions falling into the National Conservation Area.

It should be noted that, although this plan was brought into force in 2012 and section 8 of the Airport Development Ordinance (below) has precedence, consideration of the above is provided for in the design and environmental plans of the project.

The LDCP also states the following with regard to the airport.

#### *10. The Airport*

*10.1 This revision of the LDCP was based upon the assumption of the development of the Airport at Prosperous Bay Plain. Construction has started and opening is due in late 2015.*

*10.2 Development permission for the Airport and its associated infrastructure was granted through the Airport Ordinance 2006 and this clearly set out the Airport Development Area (ADA) including development in Ruperts Bay and Ruperts Valley.*

*10.3 Notwithstanding, the policies in this revision are designed to (1) enable the development of the airport, and (2) prevent development which would preclude or prejudice any element of its construction or operation.*

*10.4 It is recognised that such a major infrastructure development may demand flexibility extending beyond the established ADA and the policies recognize and facilitate such flexibility.*

### **Airport Development Ordinance**

8. (1) Nothing done in an Airport Development Area with the consent of the Governor in Council shall be held to be in contravention of the Land Planning and Development Control Ordinance Cap. 66

Provided that the Governor in Council shall consult the Land Planning and Development Control Agency before consenting to any matter which, apart from this subsection, would normally require the approval of the Agency.

### **Exchange of Letters 2011 – Appendix B List of Services to be provided by SHG to the DBO Contractor**

6. Airport power line for Phase 2 Operations – a 500KVa power line from Bradley's Garage will be installed by SHG and will be available to the Contractor as the primary source of power for Phase 2 Operations;



**Volume 3b of the Design Build, Operate and Handback Contract:**

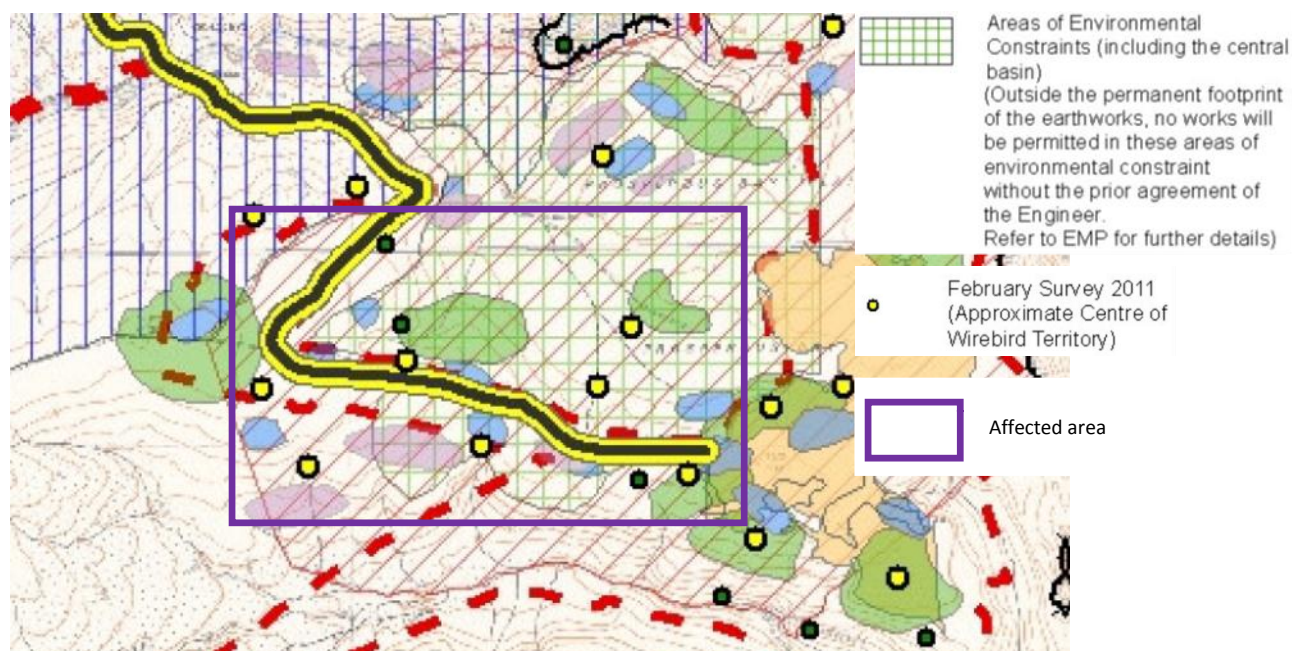
**5.3 DESIGN CRITERIA**

**5.3.1 Environmental Requirements**

*As far as possible services routes shall avoid sensitive sites including ecological and heritage features as defined in the EMP.*

**Environmental Management Plan Feb 2011**

**2.7.2A** *constraints map is provided (see Figure 1 in this EMP) to show protected areas around the airport development, including the reserve area of the central basin of PBP and other areas of importance for Wirebirds and landscape quality. These areas shall be protected from construction activities. No works shall be permitted in these areas without prior agreement of the Engineer and other unauthorised access that may damage the ecological interest of this area shall not be permitted.*



**4.2.5.10** *Requirements in respect of Ancillary Components... power supply....*

**4.2.5.10** *Offsite works required for the installation of, and access routes to, any of the above noted ancillary airport components, shall minimise land take whilst achieving the construction and maintenance objectives. Further detailed survey will be undertaken by others in parallel with the design to ensure that damage to any valued ecological resources such as endemic plants is avoided or minimised by appropriate mitigation. The design shall also take into account the local landscape sensitivities and provide a design which minimises the intrusion into both the local and wider landscape.*

**4.2.5.23** *All new power supplies shall be routed below ground in sensitive and visually intrusive locations.*

**4.2.5.24** *As described in the Employer's Requirements, Volume 3b, Section 18 Water Supply, the routing of the pipelines and overhead line (where these are not buried) shall be agreed with the Engineer and shall be designed to sympathetically fit into the landscape avoiding routes along ridgelines or across open visible landforms.*



## **Environmental Context**

The extracts below are taken from the St Helena Airport Project Environmental Statement and provides a context of the area affected.

### **Southern Plateau (This is the area between Tungi Flats and the Airport Terminal)**

#### **9.3.5.1 Habitats and Vegetation**

*Lateral areas of the Central Basin include the area termed the Southern Plateau which comprises a diverse range of desert and semi-desert habitat types. These include a saddle shaped area to the west of the site of the proposed airport terminal with a higher cover of plants comprising an attractive mosaic of samphire, ice plant, babies' toes and Eragrostis. Adjacent areas of stabilized bare sand and soil crusts are often covered by lichens. Creeper is often also present. A similar area is present on a plateau to the north of the Central Basin between Fisher's Valley and the northern end of the proposed runway. The endemic plover, the Wirebird, often favours these areas with a better cover of vegetation which probably support a greater density of invertebrate prey. Small rocky outcrops add to the habitat diversity in these lateral areas and these are usually covered with a diverse community of lichens with 6 or 7 species present in very small areas (e.g. within a 20 centimetre (cm) square). The western extent of the Southern Plateau forms the catchment for Bone Gully.*

#### **10.3.4.6 Landscape Character Area 6 Prosperous Bay Plain**

*Refer to Figure 10.3 Photographs 6.1 – 1.12 in Volume 3 of this ES Prosperous Bay Plain (PBP) comprises an exposed semi-desert landscape and represents probably the largest area of relatively level ground on the island. Whilst PBP contains a surprising diversity of habitats influenced by substrate, wind, temperature and moisture level, the floristic diversity is low. Bare ground is prevalent in most areas of PBP with the substrate material variable and ranging from fine, dusty particles to small rocky outcrops. Vegetation cover is sparse and limited to a few dominant species such as the invasive prostrate forming creeper (*Carpobrotus edulis*) and on some of the more rocky areas samphire (*Suaeda fruticosa*) an indigenous species is more common. Low growing prostrate grasses are also common in some areas along with occasional bushes of wild tobacco (*Nicotiana glauca*). Isolated pockets of endemic species such as babies' toes (*Hydrocotyle acrostichoides*) a succulent annual are also evident across the Plain. Whilst the topography of PBP is broadly level compared with the highly folded landscape of much of the rest of the island, there are still a number of irregularities present in the landform. A lower lying depression to the east of the character area, known as the central basin is surrounded by a raised plateau to the south and east and a deep gorge to the north (LCA2). This contrasting landform is further emphasised by the extensive areas of ground disturbed by aggregate winning in the north of PBP. The east of PBP is fringed by a dramatic coastal landscape of steep, rugged cliffs where the occasional colony of tea plant (*Franklinia albertiana*) and scrubwood (*Commidendrum rugosum*) are evident.*

*Due to the expansive and open nature of PBP, the scale of the landscape appears large with views to the west focussing on the Peaks, whereas the dramatic form of King and Queen Rocks and the trachyte dome of Great Stone Top dominate views to the north and south, respectively. Although PBP is a fairly barren and exposed landscape the harsh nature of the environment exhibits a unique scenic quality.*

*Sensitivity to Change: High*

*Landscape Scenic Quality: Very Attractive*

*Landscape Value: High*

## **Dry Gut**

### **10.3.4.5 Landscape Character Area 5 Eroded slopes with extensive gully systems**

Refer to Figure 10.3 Photographs 5.1 – 5.8 in Volume 3 of this ES This area covers extensive tracts of highly degraded land stretching from Sharks Valley in the south to Turk's Valley in the north. It is characterised by extensive, eroded slopes and deeply incised valleys where the weathered rock has resulted in the formation of colourful substrates. The landform across this area is typical of the effects of a highly eroded and consequently folded topography. Although the amount of bare ground is variable throughout the area, vegetation is generally limited to the more invasive species such as creeper, prickly pear (*Opuntia vulgaris*), Wild Pepper (*Cluytiapulchella*), English aloe (*Furcraea gigantea*) and wild coffee (*Chrysanthemoidesmonilifera*) which are abundant in the guts, eroded gullies and exposed valley sides. A variety of forestry and other dryland species have also been planted to control erosion such as *Acacia longifolia* with *Mimosa acacia* which are also regenerating successfully on the upper, more densely vegetated slopes. The valley floors often contain fine soil and dust resulting in a greater density of vegetation, largely due to the intermittent water which flows along the ephemeral watercourses. The apparent lushness of the vegetation in such areas contrasts sharply with the eroded valley sides. This character area is largely uninhabited with the exception of the occasional property, building or road. There is a sense of wildness about this landscape which is accentuated by the changing weather conditions which have a strong bearing on the experience and perception of this landscape.

*Sensitivity to Change: Medium*

*Landscape Scenic Quality: Good Landscape with small pockets of Very Attractive scenic quality*

*Landscape Value: Low - Medium*

### **10.3.4.8 Landscape Character Area 8 Dry Gut**

Refer to Figure 10.3 Photographs 8.1 – 8.7 in Volume 3 of this ES This character area covers the lower section of Dry Gut which comprises a narrow, deep gorge. The steep side slopes are sparsely vegetated with rocky outcrops of varying sizes particularly evident along the upper sides of the gut. Vegetation is sparse and almost entirely limited to lichen covered rocks and invasive species such as creeper which occupy small pockets of the rocky side slopes. The valley floor contains large, smooth boulders which form a sandy and dusty river bed, evidence of the infrequent flows which run through the gut. The south eastern head of the gut reaches a dramatic waterfall and pool (mostly dry other than during seasonal rain events) where views extend towards Gill Point and the sea. To the western end of the character area the narrow gorge opens out into a wide, open valley. Whilst views are generally contained by the steep sided gut, Bencoolen dominates views to the south. Despite a footpath running through the gut, this character area retains a strong sense of remoteness.

*Sensitivity to Change: High*

*Landscape Scenic Quality: Very Attractive – Highest Quality*

*Landscape Value: High*

### **Approval granted by Executive Council**

The Planning permission granted in 2012 states:

*“Council noted that the proposed electricity installation would comprise a mix of underground and overhead cables. The option being recommended was the most appropriate (when considering the terrain and the need for clear areas closer to the airport site) and lowest cost option while construction work is being undertaken. However, Council noted that once the major works were*

*completed this could be adjusted if it was felt that the overhead lines were too obtrusive or obstructive. The only additional cost the adjustments would incur would be the removal of the poles, and additional trenching purchased and installed for underground cabling.....*

*Following further discussion, Council advised and the Governor agreed to grant Development Permission for the electricity supply to the airport site to be provided through a combination of overhead lines and underground cables as proposed, on a temporary basis for the construction period of the Airport Project; and to revisit the arrangements to give final approval to the final proposed designs for provision of electricity to the airport site nearer to project completion.”*