





Planning Application Consultation Wind Turbines and Battery Storage

# **Committee:**

Paul Smith - PASH Global

Ismail Mohammed - Chief Planning Office SHG

Barry Hubbard - CEO Connect

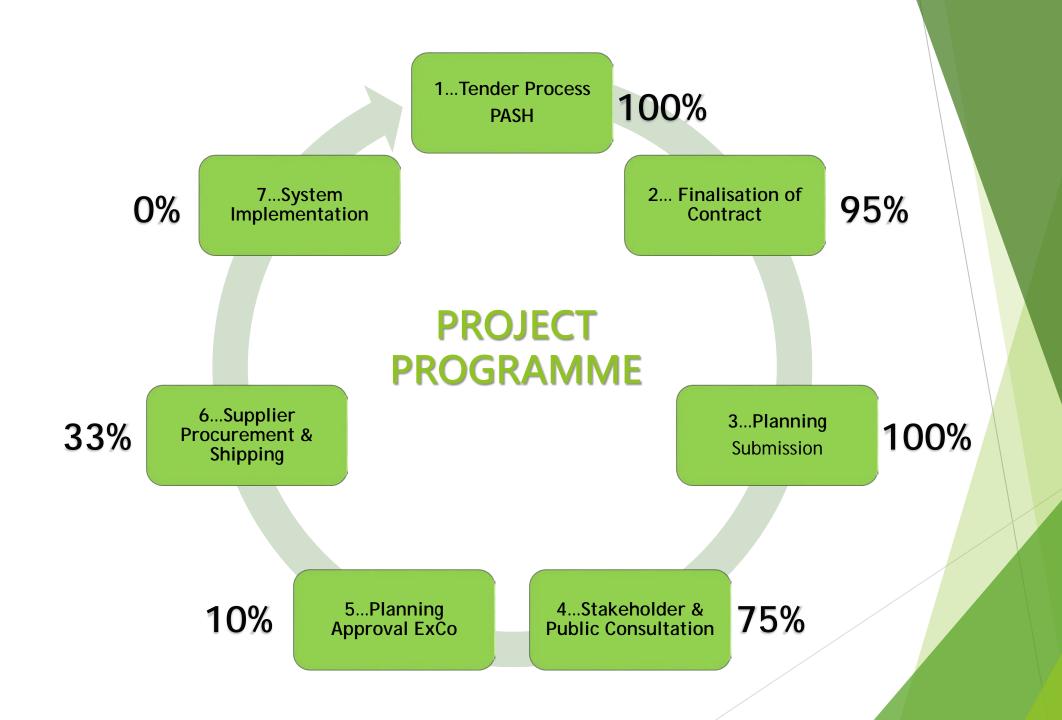
Ronald De Reuck - Project Manager Connect

# **PURPOSE OF MEETING**

To inform all key corporate role-players in respect of the importance of this project for all the inhabitants of the island and the subsequent actions necessary to be taken to ensure its successful & timely completion.

### **Understanding of the Following**

- 1. Ensuring success to become 100% dependent on renewable energy by 2022
- 2. Project Development Process
- 3. Limitations and Solutions
- 4. Target Dates



1...Tender Process 100%

7...System Implementation

2... Finalisation of Contract

6...Supplier Procurement

3...Planning Submission

5...Planning Approval ExCo

4...Stakeholder & Public Consultation

#### **Tender Process**

- Planning and formulation 2016.
- Started January 2017 with EOI.
- EOI was received from 48 suppliers.
- By late 2017: 5 bidders were selected for the Best and Final Offer Stage of which 4 then visited the island and 1 pulled out.
- PASH preferred bidder.

#### Criteria:

Ensure that the economic and technical aspects are in line with the best interests of St Helena and to become 100% renewable by 2022.

1...Tender Process

7...System Implementation

95%

2...Finalisation of Contract

6...Supplier Procurement

3...Planning Submission

5...Planning Approval ExCo

4...Stakeholder & Public Consultation

#### 2... Finalisation of Contract

- Purchase Payment
   Agreement (PPA) Contract
   will be for 25yr.
- Very detailed agreement as it's the largest private investment into the island.
- All Parties to sign once final agreement is in place.

1...Tender Process

7...System Implementation

2... Finalisation of Contract

6...Supplier Procurement

100%

3...Planning Submission

5...Planning Approval ExCo

4...Stakeholder & Public Consultation

#### **Before Planning Submission**

- Consultation with all stakeholder through all stages.
- Environmental Impact Assessment
   Planning Application Documentation
   for:
- Wind & ESS(Battery Storage)

#### **After Planning Submission**

- Public Advertising
- Consultation
- LDCA Report
- LDCA Recommendation to ExCo

# 1...Tender Process

7...System Implementation

2... Finalisation of Contract

6...Supplier Procurement

3...Planning Submission

5...Planning Approval ExCo

4...Stakeholder & Public Consultation

**75%** 

#### **Stakeholders Consultation:**

- St Helena Airport
- Deadwood syndicate
- ANRD
- Councillors & SHG

#### **Public Consultation:**

- Advertised in local papers
- Radio interviews
- Public meetings at Harford, Kingshurst & Jamestown Community Centers

#### **Planning Approval ExCo**

- Planning Application Documentation
- LDCA Report
- LDCA Recommendation to ExCo
- Planning Decision
- Submission Target Date: January2020

1...Tender Process

7...System Implementation

2... Finalisation of Contract

6...Supplier Procurement

3...Planning Submission

10%

5...Planning Approval ExCo

4...Stakeholder Consultation & Site Securing

### Note this Stage is dependent on Planning Consent & the contract being signed

#### 1...Tender Process

#### **Supplier Procurement**

#### On Island

- Expressions of Interest
- Tenders and Tender Process
- Contractors Shortlisted
- Contract with local contractors

#### **Off Island PASH** Lead time 6-9 months

- Procurement of Solar System Equipment
- Procurement of Wind Turbine Equipment
- Procurement of ESS System Equipment
- Shipping of all equipment



2... Finalisation of Contract

> 3...Planning Submission

5...Planning **Approval** ExCo

33%

4...Stakeholder & Public Consultation

#### **System Implementation**

Construction of Civil Works

Target Start Date: February - March 2020

Installation & Commissioning of Solar,
 Wind & Battery Storage System

Target Date: End of Mar 2021

1...Tender Process

7...System Implementation

0%

2... Finalisation of Contract

6...Supplier Procurement

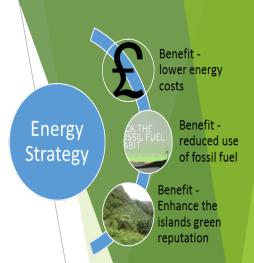
3...Planning Submission

5...Planning Approval ExCo

4...Stakeholder & Public Consultation

#### **Key Potentially Beneficial Impacts**

- Reduction in emission of harmful polluting greenhouse gases.
- Cost savings derived from reduction in imported diesel.
- No volatile global markets on the St Helena economy.
- With careful marketing can become part of campaign to promote St Helena as a "green" destination.
- Employment creation for St Helena in the long-term.
- More skilled training and investment.
- No additional financial cost to SHG or Connect.
- Visual Impact for tourism.



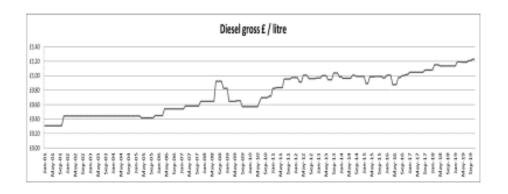
### **Key Potentially Adverse Impacts**

The majority of key potentially adverse impacts are associated with the construction phase of the project and can be mitigated through good construction environmental management plan (CEMP):

- Encroachment on wirebird habitat.
- Construction schedule to consider Wirebird breeding season.
- Distress caused to wirebirds during the movement of turbines and other equipment.
- Planning restrictions relating to designated or proposed National Protected Areas.
- Agriculture and food security.
- Visual impact.

## **Utility Costs**

- Annually 2 Million Litres of Diesel Consumed
- Last Year £1.8 Million Cost of Diesel



#### **Utility Costs**

- PPA Price Fixed (not even inflation)
- PPA Price Reduces in Real Terms (inflation)
- Cost Savings Greater than Subsidy
- Regulator will then Require Savings to Consumers
- Tariffs will be Restructured following Public Consultation

#### What this Means

- Connect will not need £680k Subsidy so SHG can use elsewhere.
- Without subsidy the URA will require Connect to pass on savings to customers.
- Fuel price is highly volatile so in 25 years time should be much higher.
- PPA Price is fixed so largest cost is stable for the long term.



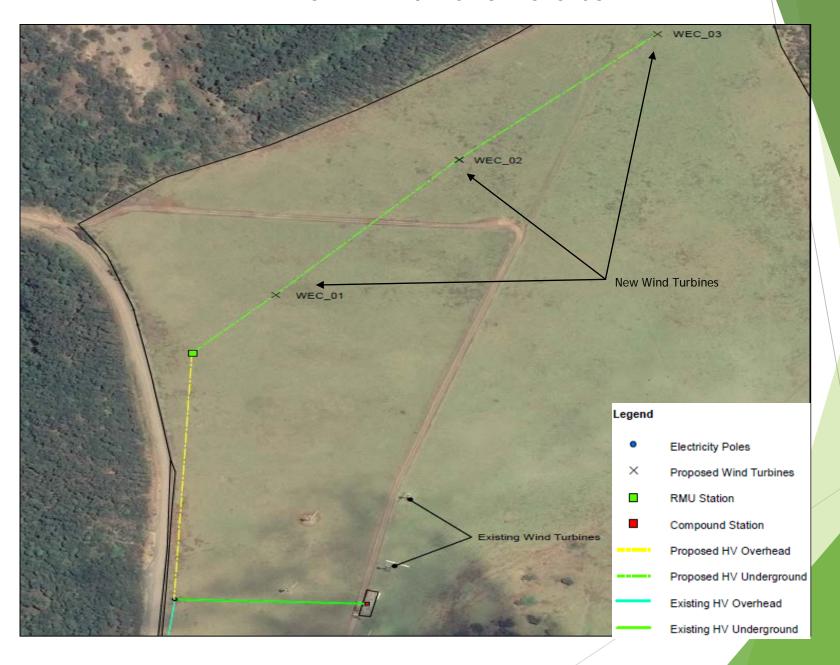


#### Why the decision to install bigger wind turbines

- The total renewable installation will be up to 5MW over 25yr. period
- Connect's 12 wind turbines combined equals 1MW.
- 3MW smaller wind turbines will be 36 wind turbine with a total of 42 turbines at Deadwood Plain.
- The impact and footprint will be unacceptable.



## New Wind Turbine Site



## Visual Comparison

View from the Weather Station area with approximation of new wind turbines



View from the gate area with approximation of new wind turbines





View from Longwood (above Mulberry Gut) with approximation of new turbines



View towards Deadwood Plain from the Alarm Forest area with an approximation of the new turbines

## Aircrafts Flight Approach



## Height above sea level

- The Barn 616m
- Flag Staff 700m

New Wind Turbines:

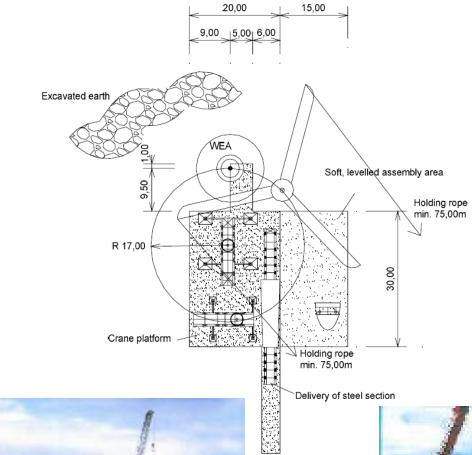
- Ground level 523m
- Top of blade 590m

Distance to Airport - 5.2 km

## Comparison New and Old Wind Turbines

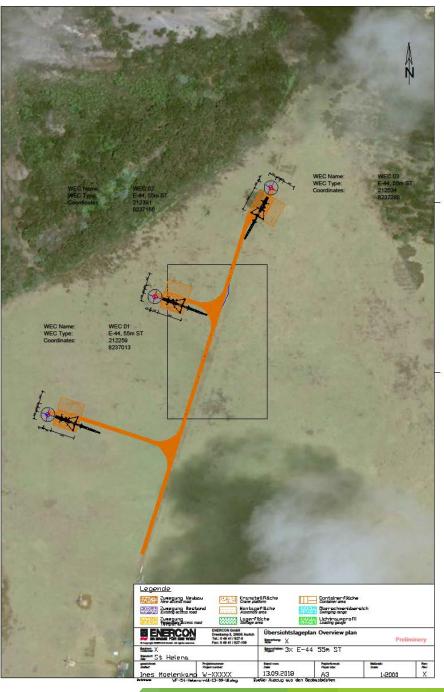


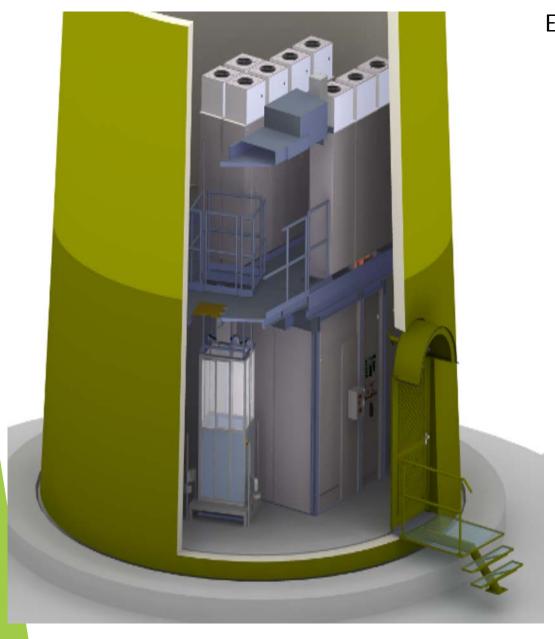
## **Construction Footprint**











#### Enercon E-44/S/54/3K/01





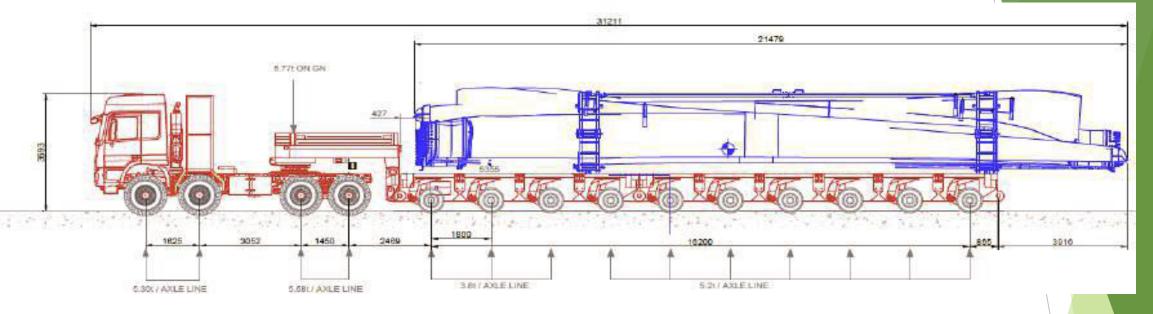
## Transporting of Wind Turbines



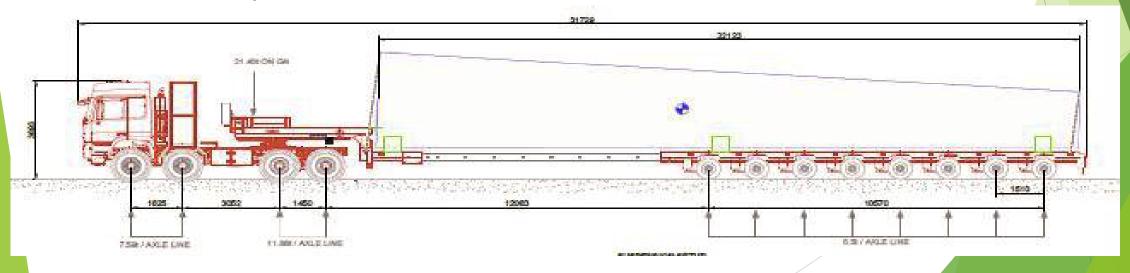




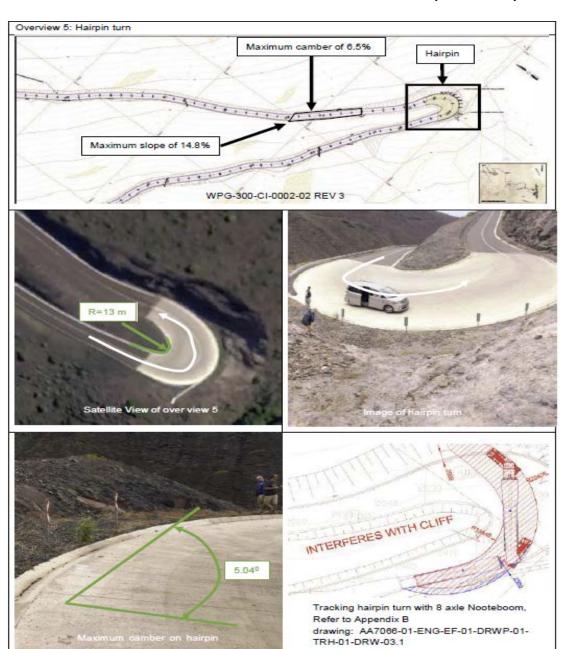
### Blade transport combination.

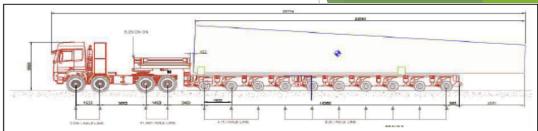


Tower section transport combination.

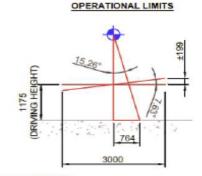


#### Transport Rupert's Bay to Deadwood Plain





Side View of proposed new trailer configuration: : AA7066-01-ENG-EF-01-DRWP-01-TRO-01-DRW-03



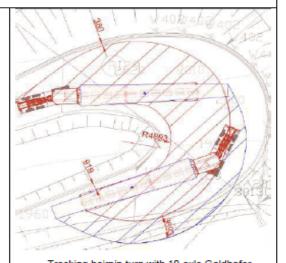
#### STABILITY NOTES:

GEOMETRIC STABILITY: 15.27°(27.3%) HYDRAULIC STABILITY: 66.4° (229.2%)

THUS GEOMETRIC STABILITY IS LIMITING

OPERATIONAL LIMIT: 7.63" (13.4%)
MAXIMUM CROSSFALL: ±199mm

Allowable camber



Tracking hairpin turn with 10 axle Goldhofer, Refer to Appendix B drawing: AA7068-01-ENG-EF-01-DRWP-01-TRH-01-DRW-03.2

#### Detail:

- GPS Co-ordinates: 15°55'50.42"S, 5°41'58.90"W
- Maximum Slope: 14.8% (8.4°) from 2060 to 2120 m peg distance, the transport combinations will traverse slope without issue if an 8x8 drive truck is used.
- Maximum camber is 6.5% (3.7°) and will not be problematic for all transport combinations.
- Hair pin turn is at the peg distance of 1980 to 2020m with an incline 1.06 % (0.57°) and a camber of 5.04 % (2.88°). Both are within limits (for all transport combinations) and therefore camber and incline will not be limiting at the hairpin turn
- Tracking confirms that the Nooteboom 8 axle transport combination will not work, Client needs to confirm
  if the overhang on the Goldhofer 10 axle transport combination is allowable.
- To determine the trailer required for the blade transport combination, a blade drawing with transport frames must be given.

## Battery Storage (ESS)

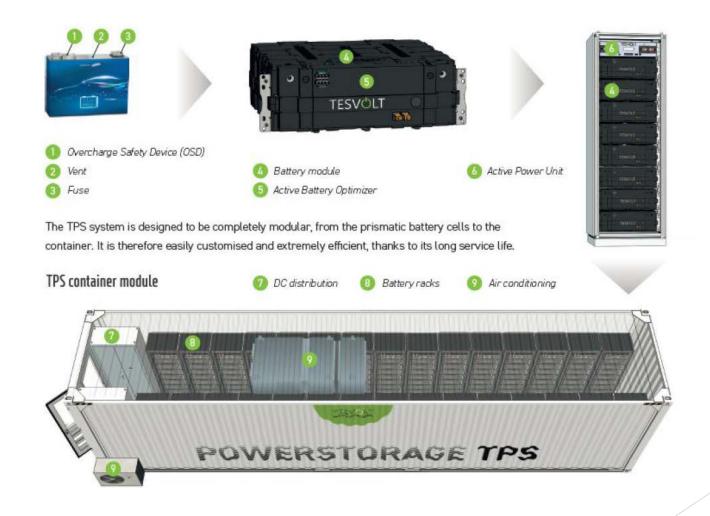


## **Battery Storage Site**



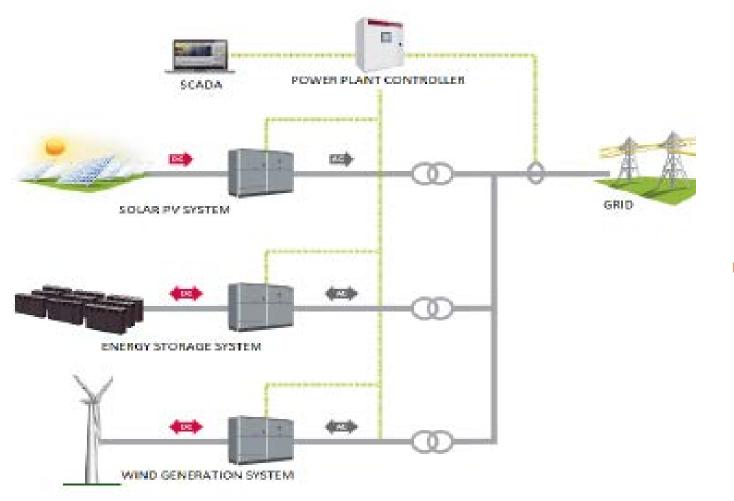


#### 3.2.5 <u>Container Solution</u>



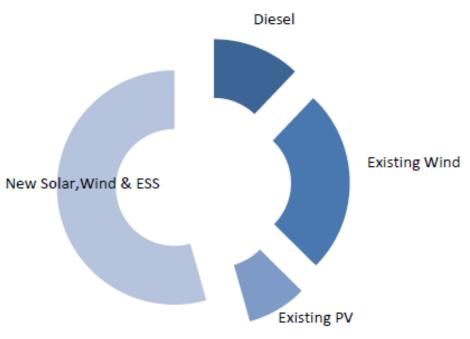


## **PASH Project Overview**



## **Estimated**

## Renewable penetration



# Thank You