Scottish & Southern Electricity Networks

Date of Submission

n/a

Network Innovation Allowance Closedown Report

Notes on Completion: Please refer to the appropriate NIA Governance Document to assist in the completion of this form.

Network Licensees must publish the required Project Progress information on the Smarter Networks Portal by 31st July 2014 and each year thereafter. The Network Licensee(s) must publish Project Progress information for each NIA Project that has developed new learning in the preceding relevant year.

Project Closedown

Project Title	Project Reference
Assessment of Remotely Operated Mulching Methods	NIA_SSEPD_0018

Project Licensee(s)	Project Start Date	Project Duration
Scottish Hydro Electric Power Distribution, Southern Electric Power Distribution	Nov 2015	12 Months

Nominated Project Contact(s)

David MacLeman

Scope

The purpose of this project is to investigate if using remotely operated forestry machinery can significantly reduce the cost and the potential for safety incidents during forestry mulching.
There is a project plan in place to cover the following steps;
A task specific risk assessment will be created by our business representatives and engineering policy teams that will consider all the potential hazards or issues associated with the new machinery.
A new work programme specific to the task will be developed for the duration of the trial based upon the current programme carried out under traditional methods.
A review of the available plant and equipment across all working environments will be undertaken to identify the most appropriate equipment for the field trials. The equipment will then be purchased or hired depending on pricing and availability.
Staff to be involved in the project from an operational perspective will be selected based on their experience of the current method and experience in using heavy machinery. Training will be provided at this stage to ensure that persons in control of the plant will have the correct authorisations required.
A 6 month trial period will be undertaken using the machine and the operatives and their supervisors will provide feedback and continual assessment as to their benefits.
The results from the trial will be used to make a comparison between the current method and the innovative method and assess the viability of the innovative method from a consideration of financial and safety factors.

Objective(s)

- Define risk assessment for the use of plant
- Develop trial work programme
- Evaluate commercially available options based upon the programme
- Procure machine and carry out training
- Commence trial period of 6 months
- Compare methods and determine the viability of the innovative method

Success Criteria

The project will determine the viability of the use of remotely operated mulching methods

Performance Compared to the Original Project Aims, Objectives and Success Criteria

The project addressed the problem of controlling the growth of bushy and woody species underneath the spans of distribution OHL. Hand cutting using chainsaws and chipping machines is slow and can be risky. A mechanised approach was used to reduce the amount of hand cutting, to increase productivity, and to lower the cost per span for this work.
The project used a commercially available tracked vehicle ("Bushfighter" from W C Merrett) with a rotating toothed drum, to cut down bushes and small trees to a coarse mulch. The work was carried out safely by two workers, compared to the four who are normally used for hand cutting such sites.
The machines proved to be reliable and delivered productivity increases of between 2.8 and 3.4 times that of the standard method. This was measured in spans cut per man-day.
The project demonstrated very positive economic value to the company of using such machinery on suitable spans. The largest number of suitable spans are found in the SHEPD licence area and the method is most viable in this region.

Required Modifications to the Planned Approach During the Course of the Project

The trial proceeded as expected and no modifications were required.

Lessons Learnt for Future Projects

A recommendation has been made for the adoption of this machinery in the SHEPD licence area.
No further practical trial is required to prove the effectiveness and economic value of the method
The project demonstrated that the machine is suitable for cutting woody and bushy growth on flat and sloping sites. It cannot cut mature trees. It is therefore very suitable for second and subsequent maintenance cuts
There was a reduction in the number of spans needing to be cut using handheld power tools but the safety benefit could not be evaluated in a short trial

Note: The following sections are only required for those projects which have been completed since 1st April 2013, or since the previous Project Progress information was reported.

The Outcomes of the Project

In the SHEPD region, 181 spans were cleared using the mulcher, at a cost of £175 per span including time and equipment. The cost of hand cutting these spans was estimated at £550 per span, a saving of £375 per span. 3.9 spans were cut per working day, with a crew of two, representing a productivity improvement per man-day of 3.8 times.
The Bushfighter is a mature product and is considered to be TRL 9. The aim of the trial was to establish the benefit to the network, not to develop a new type of machine
No further project is required to demonstrate the value of the machine, however some monitoring of the machines once in regular use will establish long-term usage levels and overall productivity gains.

Planned Implementation

SHEPD is expected to procure additional machines to be based at various sites
If the method is successful in the long term, SEPD may consider whether there is value to be gained by using the machine in the southern licence area. The project did show some benefit in the southern region, however there are fewer spans in this reqion suitable for machine cutting, and the focus at present is on cutting larger trees.

Other Comments

N/A