EIP014

Can we manage tree-cutting activities digitally?

Problem Statement Details

Any tree or other vegetation that is close enough to live overhead power lines could present a safety hazard - either by allowing persons to climb and get too near, or by causing supply disruption if its branches touch or fall onto live lines.

DNOs currently visually inspect overhead lines to ensure no vegetation is within the specified vicinity of overhead lines. Is there an *alternative efficient and safe method* using novel technology to identify tree species and proximity to overhead lines?

DNO vegetation management programmes are based up the results of inspection data and anticipated tree growth data. Future tree growth rates could be highly variable as our climate changes. We are looking to understand the effect climate change will have on different tree species to provide a predictive model for vegetation growth and therefore provide a better targeted vegetation management programme.

Other aspects of managing tree cutting activities include asset data collection, work planning, pre-cut surveying, post-cut auditing and reporting, and the ability to digitalise these alongside vegetation management would also be beneficial.

Key Stakeholders

Asset/Portfolio and Operations Management teams in all Electricity Network Operators (efficiency of planning and operations), and consumers (improved network performance and reduced unplanned interruptions).

Target Market

This solution can lead to a better targeted vegetation management programme which will improve the safety and reliability of the electricity network particularly in storm conditions.

Enablers and Constraints

Overhead lines are routinely inspected to assess their condition and assessments of vegetation intrusion are made during these inspections.

An app was tested within both SEPD and SHEPD which is currently successfully used as an asset data collection tool. As much as that capability is well supported, the other activities within the end-to-end Tree Cutting process require additional capabilities not supported by CHiME. Solutions should be GIS-based or have an interface to GIS; and be dispatchable using Network Reference Numbers (NRNs). Solutions that allow for management of survey information, wayleaves/consents, work orders, auditing functions and reporting would be ideal.

Scalability and Target Implementation Date

The solution can be used by all businesses who operate an exposed, overhead network which can be affected by vegetation growth. There is no 'hard' implementation date, however, this would ideally be implemented as early into RIIO-ED2 as possible to maximise the benefits.

In the absence of alternative solutions, current practices would continue to be utilised.

Innovation Strategy Target Areas

Innovation Theme	Target Area	Primary or Secondary
Data and Digitalisation	The shift to data-driven, digitally-enabled networks is critical as we move towards Net Zero. We need your help to drive standardisation, interoperability, security and digital skills whilst accelerating our transformation to data-driven networks by the mid 2030s.	Primary
Flexibility and Market Evolution	Energy networks must quickly and efficiently respond to the rapidly evolving needs of the energy system transition. We need your support to eliminate barriers to new market entrants, deploy novel commercial and network management solutions whilst ensuring fair participation and eliminating regulatory barriers within the RIIO-2 price control periods.	Not applicable
Net zero and the energy system transition	In order to meet the UK net zero targets of 2050 we must start converting our networks to deliver low carbon fuels today. We want to work with you to develop the role of our gas networks into the future by investigating, trialling, implementing and delivering safe, low carbon alternatives to natural gas such as Hydrogen.	Not applicable
	Net Zero requires connection of more low and zero carbon sources of energy generation, storage and demand to both the transmission and distribution networks. We need your innovative methods for effective network management and accessing flexibility to improve visibility, forecasting and modelling of low carbon technologies.	
Optimised assets and practices	Innovation has a key role to play in ensuring our networks continue to remain reliable, safe, secure and resilient to our changing climate. We are constantly looking to improve and welcome support to identify methods to prevent interruptions, ensure resilience, reduce climate impact and future-proof our networks.	Secondary
Supporting Consumers in Vulnerable Situations	Equality and fairness are the foundations of a just transition to Net Zero. We hope you can provide insight into the transient and situational nature of vulnerability and how we can overcome the impact the energy system has on consumers, building strong relationships for the future.	Not applicable
Whole Energy System Transition	The energy system must consider the full range of opportunities, risks and interdependencies that exist across the energy networks to integrate and optimise them in a way that best serves the consumer. We are looking for ways to improve visibility of the networks and transitional options, co-ordinate approaches and collaborate across the UK.	Not applicable