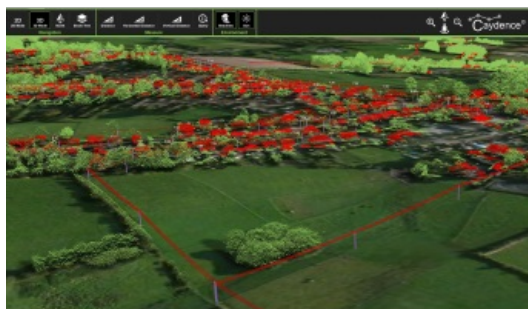


# 3D Power Line Modelling to Prepare Network for Winter Storms



The UK's Scottish and Southern Electricity Networks (SSEN) is taking to the skies to improve the resilience of its electricity networks. Working with NM Group, SSEN is using innovative aerial 3D laser scanning technology (Lidar) to survey its entire overhead electricity network and is using this data to carry out preventative works designed to minimise the risk to customers of tree-related power cuts.

Using a fleet of specially equipped aircraft, the Lidar system uses light sensors to create extremely accurate and detailed maps, revealing the exact distance – to as little as 2cm accuracy – that trees and other vegetation are positioned next to SSEN's overhead electricity lines in the north of Scotland and central southern England. These maps enable SSEN's teams to carry out targeted tree-cutting programmes and deliver maintenance

work to help develop an even more robust network and improve the service the organisation delivers to its customers.

## Data validation process

To date, SSEN has scanned 65% of its network in the north of Scotland. A data validation process will follow to allow SSEN's teams to identify the areas of highest risk to the network operator and its customers. In central southern England, SSEN has now flown 99% of its network and processed this data to directly inform its tree-cutting programmes and improve the resilience of the electricity network.

Stewart Reid, head of DSO and Innovation at SSEN, said this technology will really help serve their customers better. For the very first time they now have pinpoint accuracy of their electricity networks. This means SSEN can target their operations, such as tree cutting, taking proactive and preventative action to help deliver a safe and reliable supply of electricity to their customers.

## Network resilience

NM Group managing director, Kevin Jacobs added this kind of multi-year framework works particularly well on projects of this complexity. His company is able to closely collaborate with SSEN, gaining a deeper understanding of their unique network and business objectives. It also means NM Group can openly share new innovations and efficiency improvements over the contract lifecycle.

Forward looking initiatives like this will help SSEN identify major disruption risks, better preparing the network for severe weather. This year, in preparation for winter, SSEN has invested GBP90 million to improve the resilience of its network. This investment includes new and additional equipment, such as lightning protection and automation on its overhead power lines to help to reduce the customer impact of power cuts and improve restoration times should severe weather conditions affect customer supplies.