Analysing the potential of afforestation as a means to offset Transport Scotland's operational carbon emissions.

Abstract

Following a recent consultation, the Scottish Government have stated that major public bodies in Scotland are likely to be required to establish a zero emissions target ahead of the nation's 2045 target. The purpose of this research is to evaluate the potential for carbon sequestration to be used as a means to offset elements of a public body's carbon footprint whilst current technologies, policies and procedures are in development.

This study focuses on Transport Scotland, the national transport agency in Scotland. A multi-staged approach using quantitative analysis was applied during this research, including undertaking a carbon footprinting exercise of their current emissions, using factors published by the Department for Business, Energy & Industrial Strategy. The data included in this research was collected at source from officials within the agency, with a focus group of officials within the agency being established to analyse potential planting sites and discuss contractual and legislative requirements.

Following the primary data collection, three sites were identified by Transport Scotland officials. To assess the sequestration potential of the identified sites, the Woodland Carbon Code small projects tool was used to calculate the prospective change in carbon stocks.

The conclusion of this research is that while there is the potential to offset emissions by establishing an afforestation project, Transport Scotland should focus on the travel elements of their business, as other areas are likely to reach the net zero emissions target by default. Should Transport Scotland's current transport habits continue, then one site alone would not be sufficient in offsetting the current emissions associated with travel, however, by planting on the 3 sites identified, would that cover one years' worth of travel emissions. Year on year planting and verification of the Woodland Carbon Code calculations would be required to ensure that each year's emissions are offset. The research also concludes that one large scale planting project could potentially to offset all travel emissions well ahead of 2045.