

The use of the Green Rhino when pumping street-works

'Green Rhino' technology is being deployed by UK Power Networks on street-works to benefit the company, our customers, and the environment. Before the introduction of the Green Rhino it was accepted practice to pump water out of a street-works hole and discharge to a grass verge, if available, or down the street if not. If the water was heavily contaminated with oil and/or sediment, the company would have to arrange for a tanker to pump out the water and take it off site for disposal at a cost of approximately £1,000. UK Power Networks worked closely with Capture Green to develop the Green Rhino, an oil and sediment filter, for use when dewatering small excavations prior to undertaking work. The Green Rhino prevents the need to tanker away lightly contaminated water and also ensures any water that is pumped is clean. A Green Rhino bag costs £150 and is re-usable, with the technology subsequently having been adopted by other DNOs and in the gas, water and telecommunications sectors.

7.4 Health, safety and environment

Innovation continues to play a key role in managing health and safety both internally within UK Power Networks and for members of the public, and in managing our environmental footprint. Some of our recent examples are:

We are increasing safety by developing Unmanned Aircraft Vehicles for line inspections

We are exploring the use of Unmanned Aircraft Vehicles (UAVs). These small helicopters of 80cm in diameter are equipped with a camera and other sensors if needed. They are small, battery powered, low noise and environmentally friendly and will pass by relatively quickly to minimise any disturbance.

The use of the UAVs will minimise the need for Working at Height when condition assessments are required of towers or poles. The UAVs can inspect towers, poles or lines when they are live, therefore reducing the need for extensive load transfers and switching operations.

Line patrols after storms are inherently dangerous due to falling objects and obstructions along roads and pathways so the ability to overfly the route and take photos will greatly reduce the need for personnel to be exposed to the additional risks of foot patrols.

The trials are focussing on the usability for trained users and the quality of visuals which are obtained from the helicopter.

We reduce our environmental impact when excavating street-works

UK Power Networks continues to be environmentally friendly by recycling spoil excavated during street-works and using recycled material where possible for back fill. In 2006 the government re-classified materials excavated from street works activities from inert to reactive, making it a hazardous material. UK Power Networks was quick to act by considering what could be done to reduce the amount of excavated material sent to landfill. This resulted in the sponsorship of a PhD project with Surrey University. The first part of the project aimed to reduce the amount of material sent to landfill, and reduce the amount of virgin material used. Quickly changes were implemented to recycle excavated materials. We are now in a position where less than 3 per cent of excavated spoil now goes to landfill from a starting point of 74 per cent. The project cost £125,000 but by 2010/11 estimated to have saved £17.5 million, had we continued at 2006/07 levels of landfill use.

We have carried out trials with utilising waste heat

London has some of the largest commercial buildings in the country, requiring large amounts of electricity to heat and cool them. As an innovative example of how we can be more energy efficient by using waste heat, we developed a water cooled heat exchanger for our substation at Bankside on the Thames, adjacent to the Tate Modern. Substation transformers generate heat that is lost to the environment. The heat exchanger allows the waste heat to assist the space heating at the Tate. The benefits for us are that less energy will need to be expended within cooler fans at the substation, and lower maintenance and replacement cost will be incurred. The overall carbon footprint of the site and assets will be reduced.

Our approach to
Innovation
Strategy and delivery

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