Cable Decommissioning

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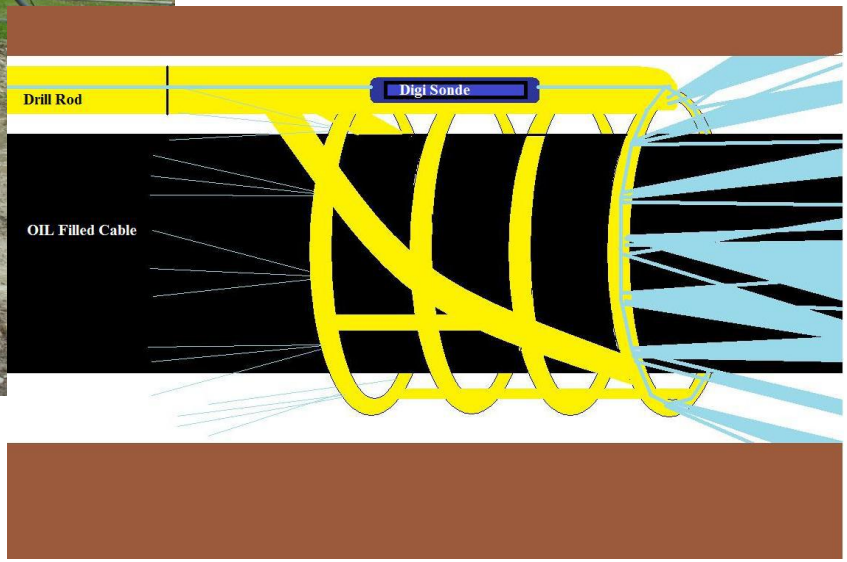
AC Cable Innovation Strategy

Ratings and Installation	Monitoring	Decommissioning
NGET 47 Dynamic Ratings (DROP)	**NGET 15** Dinorwig Monitoring	**NGET 90** Cable Extraction
NGET 82 Rating Impact (RINGS)	**NGET 36** XLPE Cables	**NGET 115** Cable Stripping Truck
NGET 87 Cable Installation Design	**NGET 48** Long Electrical Sections	
	NGET 92 PD in Cables	
	NGET 93 Gas-in-Oil Analysis	
	NGET 103 Tape Corrosion	
	NGET 116 Combustible Gases	
NGET 150 EPRI Underground Transmission		

Cable Extraction: the aim

- Reduced Direct Costs e.g. through reduced planned capital expenditure on cable removal and system monitoring



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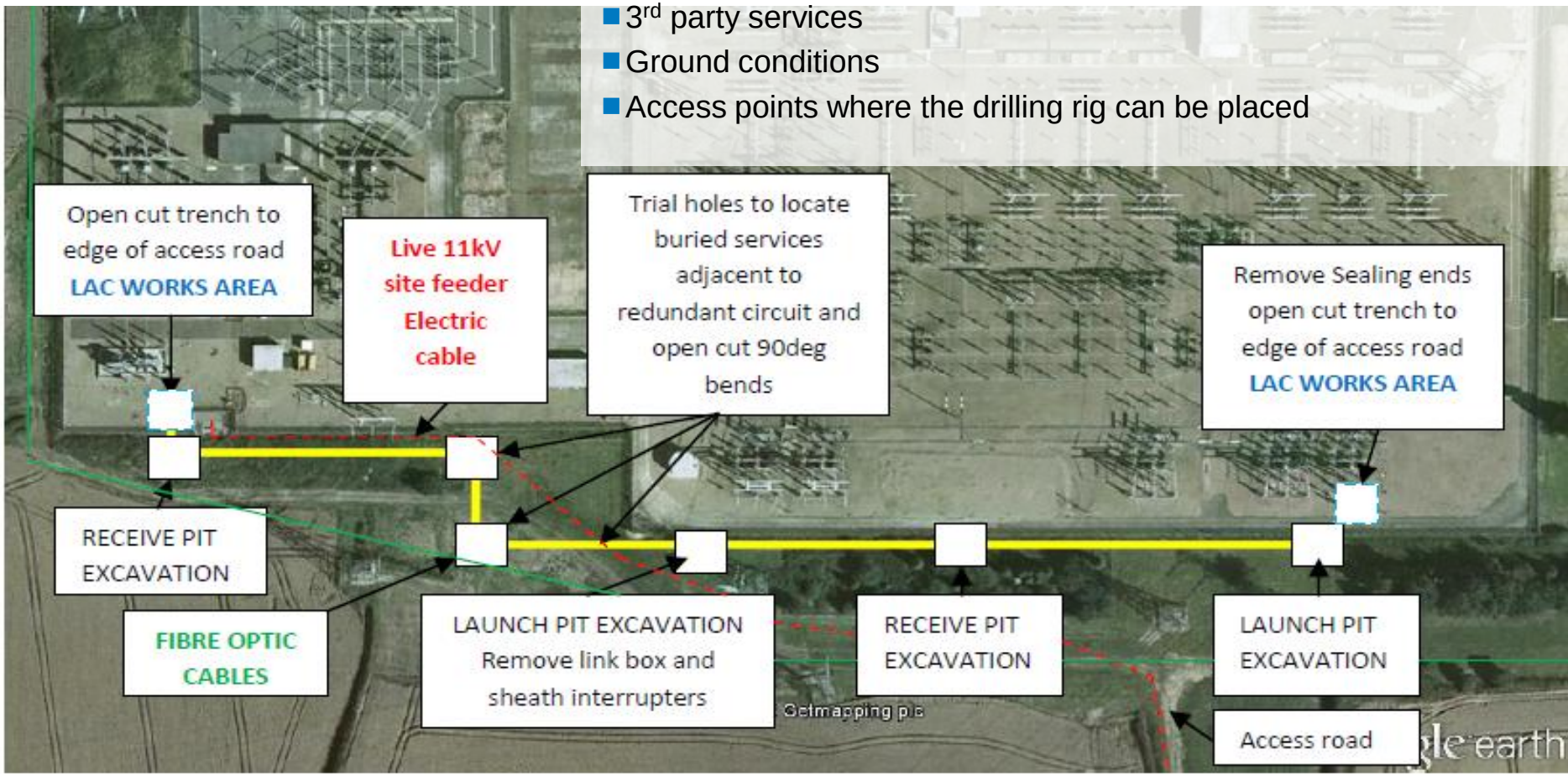
Cable Extraction: how it works

- Cable extraction utilises the directional drilling technique. A specially designed head loosens the backfill material around the cable allowing the cable to be extracted by winch or pulling device similar but opposite to cable installation

Process

1. A complete site survey is carried out on the cable route identifying
   - Joint positions
   - Sharp deviations in the cable route
   - 3rd party services
   - Ground conditions
   - Access points where the drilling rig can be placed



Estimated 1200m of 275kV 1.750 Sq in cable

Process

2. The cable is drained of all pressurised fluid

Trial hole excavations are carried out to identify any third party services or any obstructions such as repair sleeves etc

Following the survey, drill and extraction points are defined and excavated. These are predominantly located at the joint positions as the joints can be removed at the same time (cost savings)

The drilling rig is placed at one of the joint position and the drilling processes carried out between joint bays or to the next excavated point where the cable changes direction

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Cable Extraction Process

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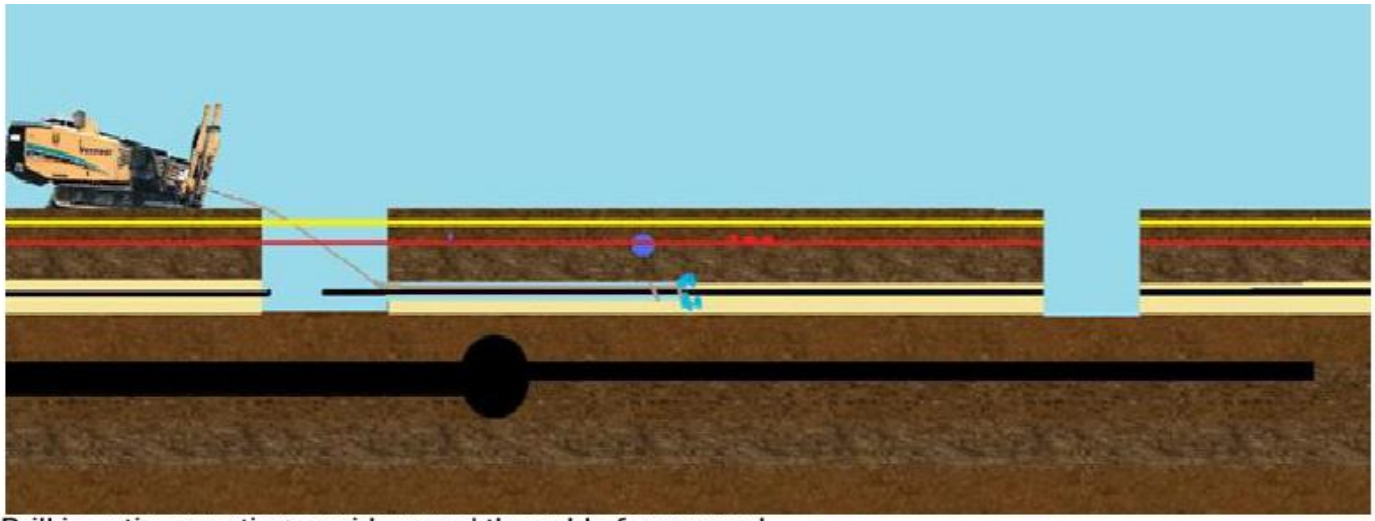

Drill in action creating a void around the cable for removal

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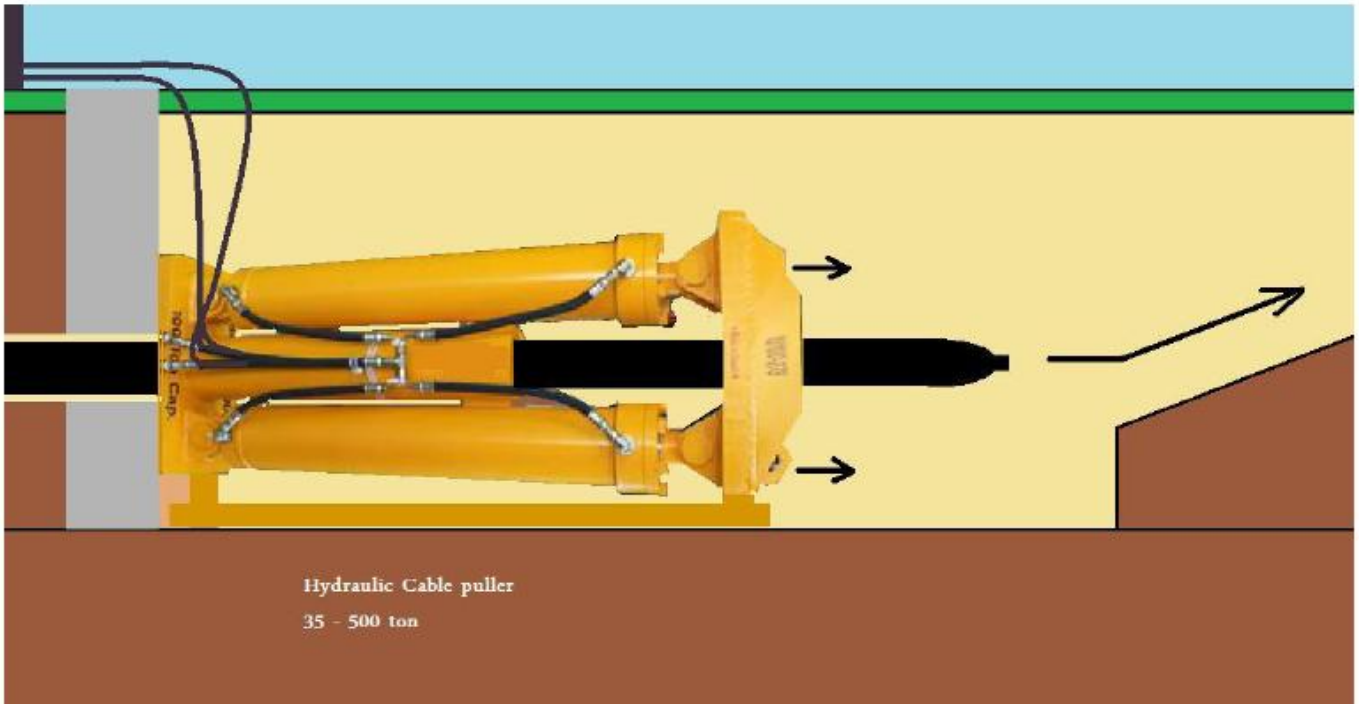
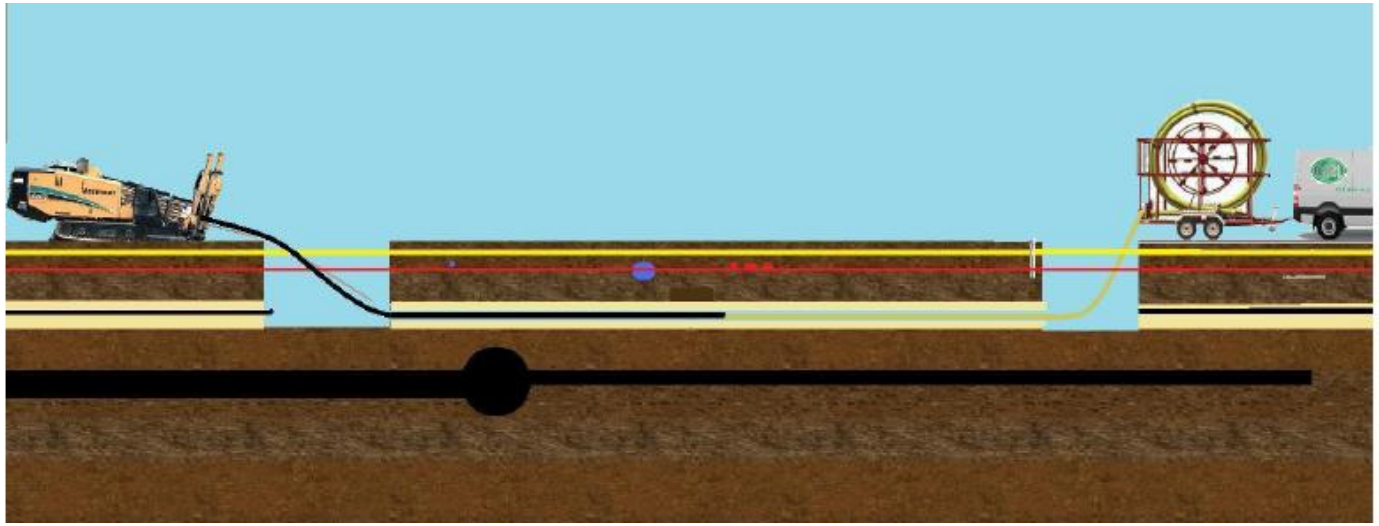
Cable Pulling Process

Once the length of cable has been freed, it will be pulled out using a 250ton hydraulically powered casing puller as used in the piling industry which incorporates a unique collet gripper system as shown below.



Back fill

- On completion of the cable extraction the void in the trench can be filled with grout or a spare duct which could be utilised for other services.
- Considerations have been made for the installation of the new cable into this void



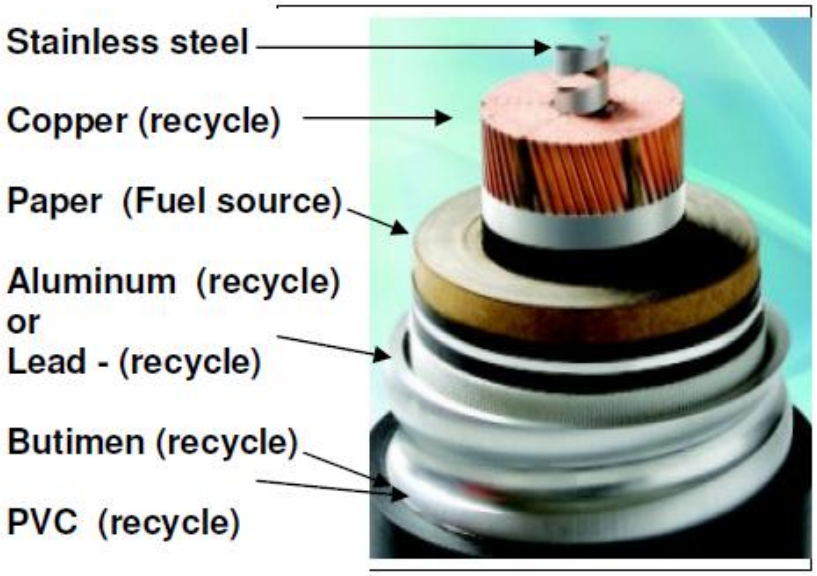
Cable Recycling

CABLE RECYCLING

When National Grid removes cable and accessories from the ground a credit is requested from the contractor for the scrap value of the materials. The value of this material or asset can never be accurately evaluated and therefore is always in favor of the contractor and the scrap metal merchant.

It is proposed that National Grid invest in developing the technology that will provide a workable design for a mobile cable stripping plant that will have the full on site capability to strip down the cable into the various components

Segregating the different cable components will all allow the metallic components to be sold at a better value with the PVC and other parts recycled or used as fuel.



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