

Can we reduce the cost of excavating pipelines?

EIP015

28 February 2023

Background

- Gas Transmission assets are buried for protection however that means when access is needed they have to be excavated.
- Due to their large size, to gain access, excavation can be very expensive, often needing access roads across fields.
- Due to some of the activity onsite excavation sizes are often very large including underneath the pipeline and either side – for example 600mm below the pipeline and 700mm either side.
- To ensure safety excavated sides need to be battered back or sloped which adds to the size.
- Boxing/piling is installed where battering or stepping isn't practical – this is more labour intensive and requires additional materials which increases the costs associated to excavation.
- Options include reducing the cost of excavations and/or removing the human from the hazardous areas or techniques/plant to reduce time taken to undertake excavation activities.



Enablers and Constraints



- SGNGN04 - Robotic Roadworks and Excavation System (RRES)
 - Focuses on excavation in a roadwork setting but removes the human from the high risk area and therefore reduces the size of the excavation
- NGT are developing an NIA on 'Lower Cost Excavation and Repair for Hydrogen Pipelines'
- Safety for personnel in the excavation is key
- Poor ground conditions/soil types can impact excavation size and cost
- Pipelines are often located in remote and restricted work areas (e.g. next to a water course) which will limit size but require expensive techniques
- The installation of trackways to allow access for wheeled vehicles is an additional constraint increasing the cost of excavation

Examples of excavations



Involvement and Implementation

- Beneficiaries would be pipeline operators who own and operate buried pipework
 - Onshore transmission and distribution companies
 - Contractors who carry out civil activities on behalf of network operators
- Target Market size – Globally, Large, cross sector utilities
- Target Implementation Date – As soon as possible



Energy Innovation Basecamp

28 February 2023
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