



Geospatial Information System (GIS)

Value Tracking Case Study



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Background

Currently it is a manual and labour intensive process to compare the relative cost of conceptual gas pipeline developments (route corridor studies) to support the consenting process of Nationally Significant Infrastructure Projects, in particular to support Preferred Corridors Statements based on Non Statutory Consultation and early environmental and engineering studies.

The current process relies too heavily on the construction engineers experience, which includes subjectivity and human factors. The current process is disconnected from formal cost estimating and too often relies on rules of thumb. This project is innovative because it makes best use of National Gas' GIS technology to provide decision support through analysis, combined with the engineer's experience. It will provide a method to generate additional information to support critical decision making where currently only limited information and assumptions are available

What's new?

The GIS pipeline costing tool pilot project has effectively proven the concept of using GIS techniques to calculate a route feasibility cost to within +/-25% of actual scheme costs.

Multiple pipeline route scenarios can now be easily assessed within a matter of hours by using the pipeline costing tool. This has the potential to help National Gas staff explore the geography of a potential route in relatively high detail using desk study methods.

Knowledge and recommendations generated during the pilot have been captured and shared via

a user guide and final report to inform future GIS projects.

The technology behind the tool has the potential to be used for a number of applications within National Gas including gas and electricity transmission and pipeline diversion planning. Many of the data collection and costing issues raised during the pilot will be project specific and will be addressed through a number of "live pilots" on real projects as and when a suitable case arises. All relevant members of staff have been briefed to identify and highlight potential customer schemes as they are raised.

The benefits

This approach will have the following benefits:

- The finer details of the tool functionality and data requirements could be refined through real world scenarios, which would offer greater potential complexity than a single pilot study.
- The National Gas GIS team could learn how to use the tool operationally as part of new business as usual processes.
- The core technology behind the tool could be put to work to generate potential project based efficiency saving.

Financial savings

Comparable time saving on each activity is estimated at 2 weeks of QS time (circa £5000), however greater benefit from avoiding consenting delays and regulatory buy in substantially more. Assuming DCO costs of 250k per month, projects have been delayed historically by up to 3 years due to planning enquiry. This risk would be substantially reduced by supporting the costing justification.



Savings to be logged from upcoming project as a demonstration of improvements.

Implementation

Following project completion, the approach has been briefed internally and examples to be shared for time/ cost savings. Ongoing input from GIS experts within the business to explore further opportunities or development to the solution.

