

**CUSTOMER STORY**

# National Gas condenses pipeline routing timeline by 93% with Optioneer

**1 day**

to arrive at preferred corridors

**65+%**

reduction on traceable costs compared to traditional methods

**93%**

reduction on time compared to traditional methods

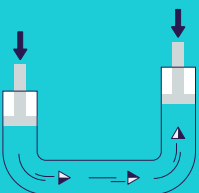
## About



**22,000+**  
Employees



**UK-wide**  
Transmission  
network  
owner



**7,600+km**  
Length of  
existing  
pipelines

## The challenge of developing pipelines to support hydrogen

As part of the movement towards decarbonisation of the energy system, National Gas is currently working on their strategy to integrate hydrogen into UK's energy mix.

Transmission network upgrades are part of this strategy. As a result, National Gas could be faced with the challenge of developing pipelines to support 100% hydrogen transport. These developments are part of Project Union which may require routing of ~2000 km of new pipelines.

Given the size of the challenge, National Gas is seeking improvements to the process and opened up an Ofgem NIA competition to evaluate software tools to assist in the process.

# How National Gas used Optioneer

Optioneer software automates the assessment of individual route options and provides a collaborative platform for design and consenting of hydrogen pipelines.

It uses geospatial data, constraint weighting and powerful algorithms to develop routes faster and in more detail. National Gas' internal processes were modelled in Optioneer. Over 1.2 million route options were analysed by the AI engine.

The options were screened and narrowed down with consideration of the following factors:

- Minimising route length and construction cost
- Minimising impact on environmental constraints
- Considering landscape amenity and visual receptors
- Avoiding unnecessary impact on socio-economic and historical constraints
- Considering hydrology, geotechnical and constructability aspects of the route
- Ensuring minimum safety requirements for pipelines



The New Pipeline AI Routing innovation project with Continuum Industries positively demonstrated the tangible advantages of utilising a system such as Optioneer for hydrogen transmission route selection. The benefits specifically in time saving compared to traditional methods were clear and of real value.

**Ian Bennet, Innovation Delivery Manager, National Gas**



## The outcome

- **Following a 16 week engagement with National Gas team, the pilot project concluded successfully. The tool was evaluated by multiple stakeholders within the business and its effectiveness was demonstrated on a >140km conceptual project and a 10km project currently in development. The pilot demonstrated that relevant routing and development principles can be successfully modelled in the software.**
- **In terms of quantified benefits, for the 10km development, the tool was proven to reduce the time required to arrive at the corridor by 93%, with a cost saving of over 65%. This equated to around £25,000 for the scheme.**

