

Photonfix™

SPE Alternatives to Welding

The funding process

- NIA Funded Project from SGN to Steer
- NIA is funding through OFGEM to support innovation within the gas industry. A significant proportion of this is to assist with moving to a Low Carbon network



The Challenge

- To remediate the network by applying sealant to all joints, repairs and disused connections ensuring that no leakage may occur thus reducing the carbon footprint and ensuring 50 year lifetime
- Traditional methods would involve excavations to uncover every joint
- Current in pipe solutions are limited in application
- Ensure that each joint is fully sealed and no damage occurs



Technology Aim

• The aim of Photonfix[™] is to reduce carbon emissions by remediation of the gas distribution network.

• Low risk operation: minimise excavations, no drill or damage to pressure envelope, seal every joint type and feature giving one trip sealing system

• **High confidence**: actively controls sealant in the joint, allows sealant to be squeezed into complete joint cavity including all leak paths of the seal

Sealing Any Joint Type



STAVELEY SCREW-GLAND FLEXIBLE

JOINT



The "BAXTER"







Additional Features





The solution - material



The solution - mechanism









Demonstration Module



Joint Sealing



Testing - Accreditation to Standard



Towards Field Use



Project Risks – Expanding applications

- Pressure
 - Gas Network is typically 2Bar, this is maintained pre-cure
 - Sealant used has potential for significantly higher
- Materials
 - Sealant material can be customised to suit the flowing media
- Longevity
 - Current qualification plan is for 50yrs

Other Tech

- IronClad
 - Painting the outside of a buried pipe from the inside, without excavation
 - Material source is in centre of pipe



1–Fluid 2-Umbilical 3-Crawler 4-Pipe 5-Control Mechanism 6-Material 7-Pump



