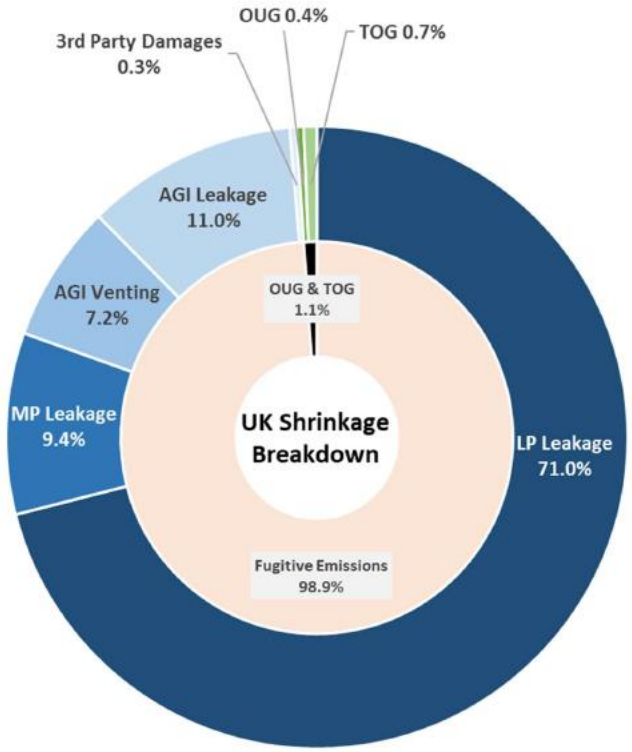
How can we remotely detect, quantify, and differentiate between leaked gas and vented gas from a gas site?

EIP060

28 February 2023

Background

- AGI leakage and venting is currently circa 18% of UK Gas Distribution Network emissions
- Automatic venting occurs from pneumatic devices as part of normal operation and from safety devices as part of fail safe systems
- Leakage from Above Ground Installations (AGIs) will be from joints, interfaces and points of failure
- While interventions to address the Low Pressure and Medium Pressure pipes leakage are delivered to reduce our overall emissions, the proportion from AGIs will increase year on year and become more prominent
- We need to move our focus onto AGIs as part of the plan to get to net zero emissions
- Therefore, it is important that we understand the emissions from AGIs at a more granular level to enable us to target, in particular, the highest emitters in an efficient and effective way



Breakdown of gas shrinkage (leakage, own use gas and theft of gas) emissions from the UK Gas Distribution Networks

Enablers and Constraints

Small compound

Regulator building

Regulator

Enablers

- **Technologies exist to detect and quantify methane emissions**

Examples include:

Cadent's SIF funded 'Digital Platform for Leakage Analytics' project in collaboration with NGG, WWU, SGN and NGN

https://smarter.energynetworks.org/projects/cad_sif0002/

NG's NIA funded 'Multi Gas Detection' project

https://smarter.energynetworks.org/projects/nia_nggt0195/

NG's NIA funded 'Monitoring of Realtime Fugitive Emissions (MoRFE)' project

https://smarter.energynetworks.org/projects/nia_nggt0137/

- **The rise in computing power!**

Constraints

- **The technologies used must operate within a hazardous area.**
- **The greatest challenge will be distinguishing between leaked gas and vented gas.**
- **Gas emissions quantification is needed, not just detection.**
- **Considerations need to be given to the compatibility or adaptability to work with future gas compositions (e.g. blended hydrogen/natural gas, full hydrogen).**
- **Solutions will need to be cost effective for scalability and may not be 'one size fits all' (as shown in example images).**

Regulator building at an Offtake

Regulators within the building

Involvement and Implementation

- Key Stakeholders:
  - Gas Distribution Networks
  - Transmission Networks
  - Shippers

- Target Market:
  - 18% of distribution network fugitive methane emissions would be better understood, enabling targeted investment to address

- Target Implementation Date:
  - It would be desirable to have an informed view of what can be achieved, to feed into the RIIO-GD3 business plan – end of 2023

Energy Innovation Basecamp

28 February 2023
ICC Birmingham

#Basecamp28

Participant joining code
Slido.com

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