

The logo for Gravitrinity, featuring the word "gravitrinity" in a white, lowercase, sans-serif font. A small green sphere is positioned above the letter 'i' in "gravity".

gravitrinity

Underground energy storage solutions

Jan 2025

Gravitricity Company Overview

Gravitricity is a technology company with expertise in underground distributed energy storage

Gravitricity at-a-glance

Experienced Management Team

Underground Technology Expert Engineers

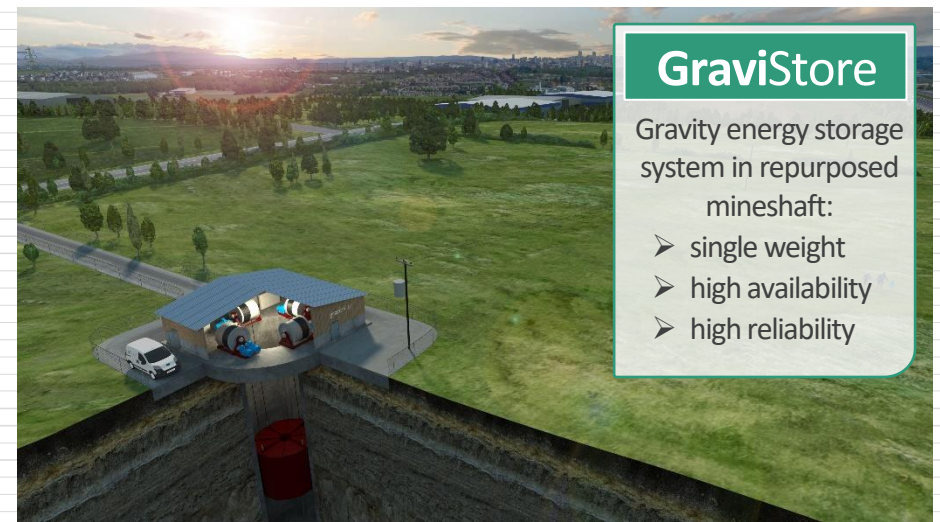
10 Patents

250kW Gravity Energy Storage System Demonstrated

Strong Industry Partnerships

Extensive Pipeline of Opportunities

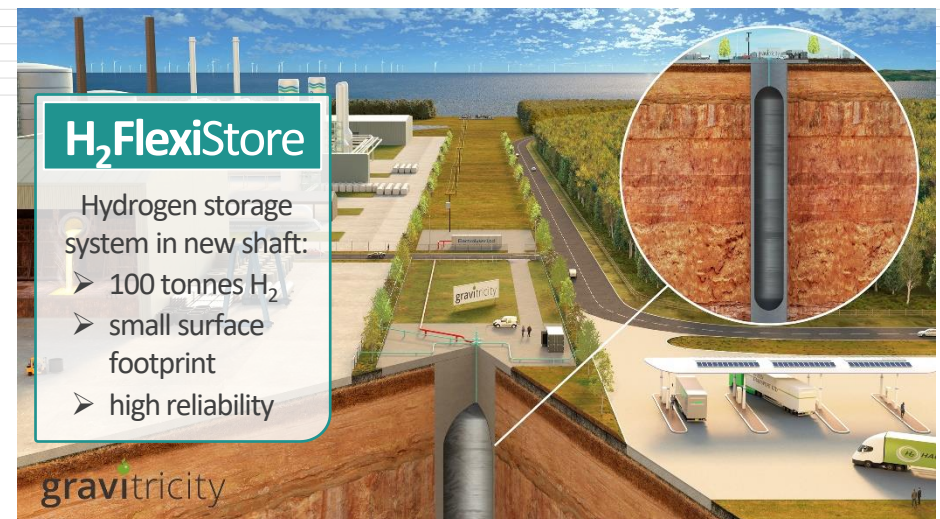
Underground Energy Storage Technologies
Engineered to Accelerate the Transition to Net Zero:



GraviStore

Gravity energy storage system in repurposed mineshaft:

- single weight
- high availability
- high reliability



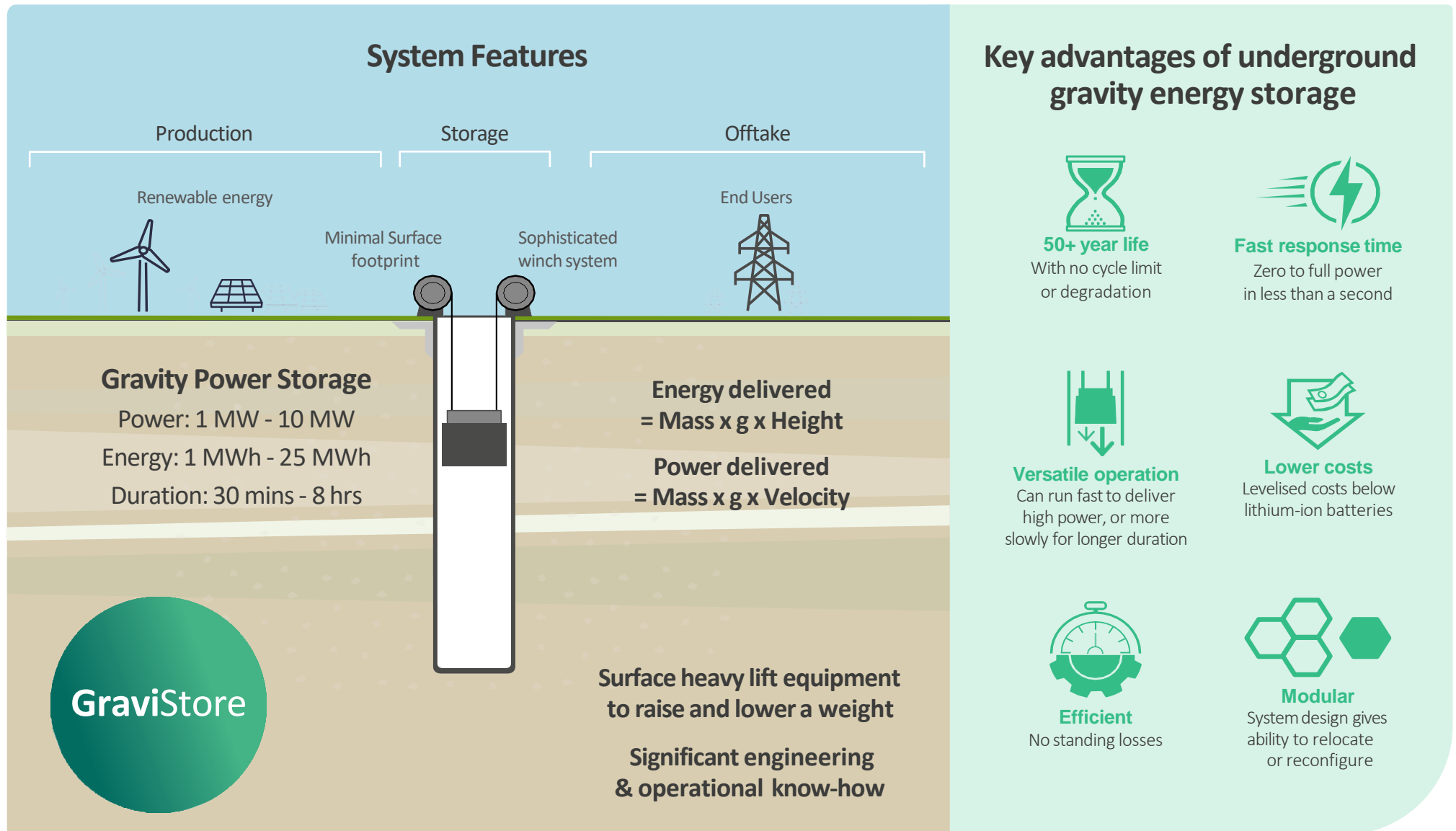
H₂FlexiStore

Hydrogen storage system in new shaft:

- 100 tonnes H₂
- small surface footprint
- high reliability

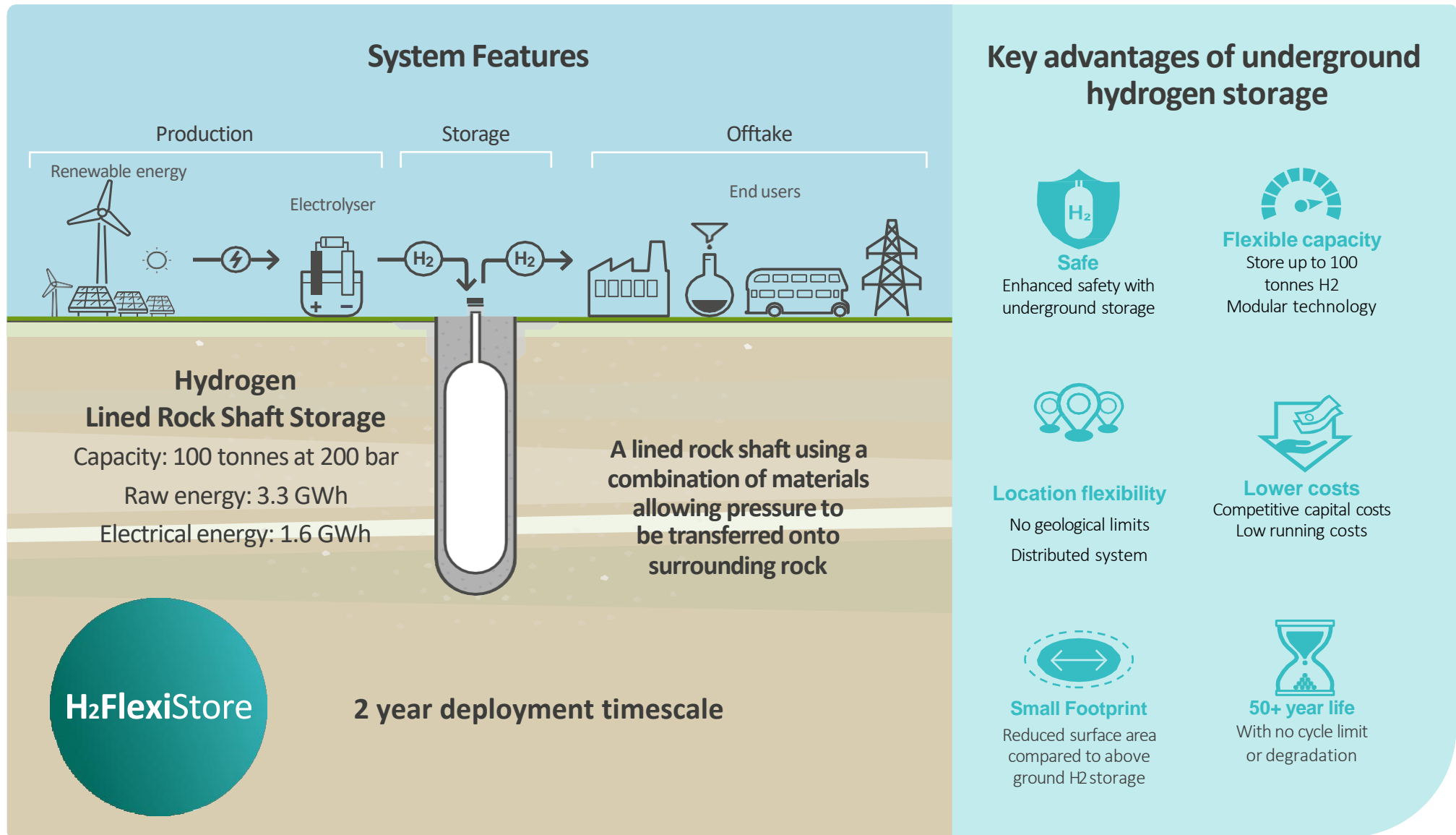
GraviStore – gravity storage key features

Uses existing mineshaft to support 1,000s of tonnes of mass to store electricity



H₂FlexiStore – hydrogen storage key features

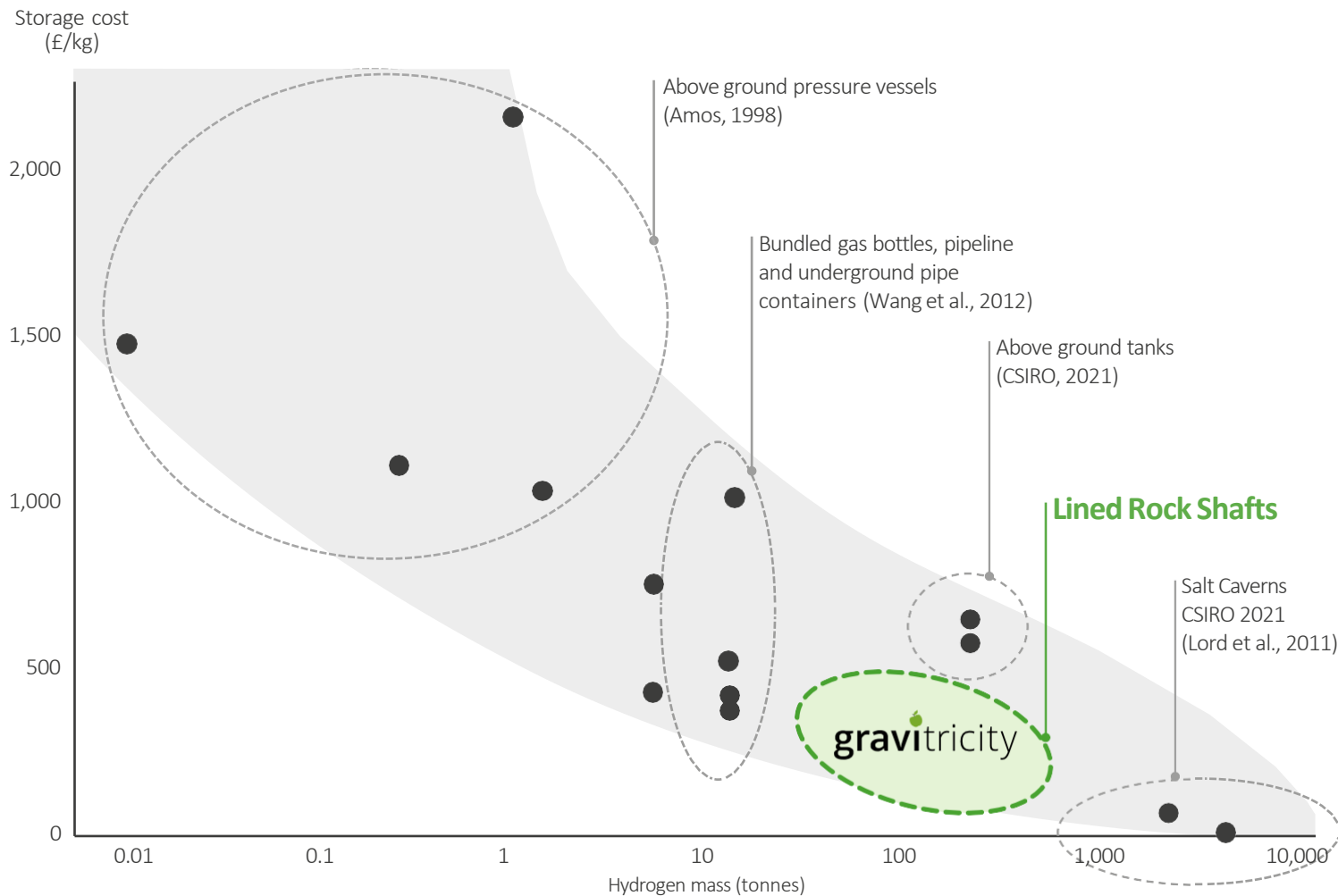
Distributed mid-scale buffer storage for Hydrogen Storage



Hydrogen storage technologies

Comparison

Need for industrial scale mid-capacity storage



1 LINED ROCK SHAFT

100 tonnes at 220 bar and 20°C
Depth: 300m
Diameter: 7m

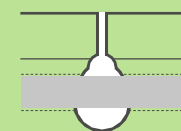
Storage capacity in tonnes equivalent to...



60,000 gas bottles
at 300 bar and 20°C requiring
4,500m³



10 kilometres of underground pipeline
at 85 bar and 20°C requiring
15,000m³



1/3 salt cavern
at 45 bar and 20°C requiring
70,000m³

H₂FlexiStore Market Segment – Hydrogen Pipelines



Nodal hydrogen storage offers system level savings for hydrogen transmission networks

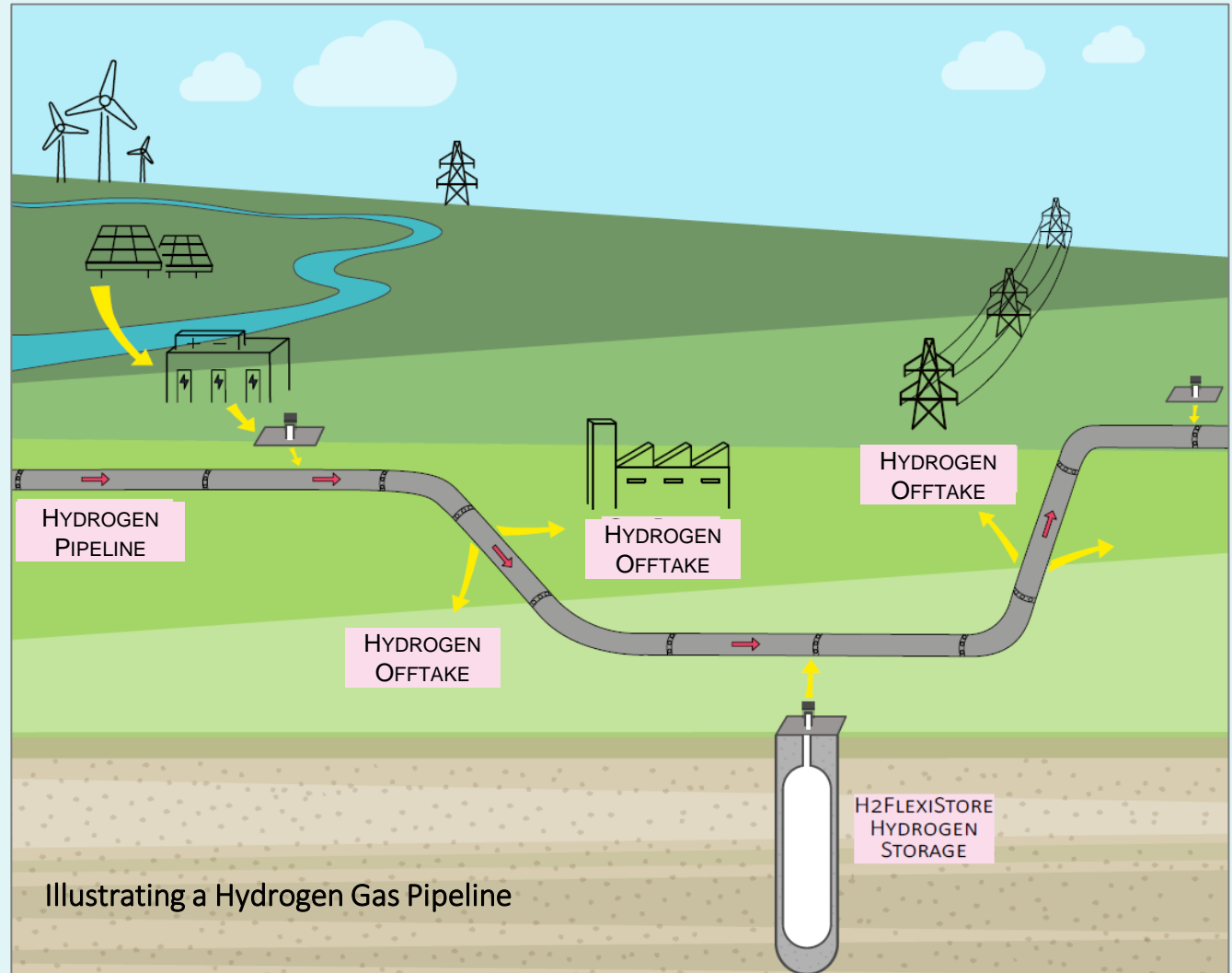
Switching gas networks to hydrogen requires additional storage to maintain flexibility.

Ofgem SIF project with National Gas (lead) and SGN. H₂FlexiStore identified as beneficial technology to achieve UK wide flexibility requirements for H₂ switch.

Key findings from 'Discovery Phase':

- Regular nodal storage points across network allows cost savings through reduced load on transmission network compressors*.
- Total UK H₂ linepack requirement expected to be >13TWh.
- Requirement best serviced by salt caverns & nodal storage.

Project Union (2000Km) represents approx. 25% of UK gas transmission. 100+ systems expected as part of UK wide hydrogen transmission.



Illustrating a Hydrogen Gas Pipeline

Gravitricity – Underground energy storage solutions

**gravitricity**

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