

Civil / Mining Engineer in grid-scale Energy Storage Innovation: Gravitricity Ltd, Edinburgh

Gravitricity is a growing start-up developing a novel mechanical energy storage system which uses solid weights to store electricity in mineshafts using gravity. This is crucial technology to decarbonising our energy systems. Following on from a mechanical Concept Demonstrator (being operated through spring / summer 2021), we will be focusing in more detail on the challenges associated with constructing full scale projects in existing and purpose-built underground shafts. As the complexity of our projects builds, we need creative and dynamic engineers to drive forward the development of this innovative technology.

Job Brief

A new role has arisen for a civil or mining engineer to take ownership of developing the procedures required for successful integration of our mechanical technology into the underground environment. This role will involve:

Mineshaft Integration: Working in close collaboration with Gravitricity's Lead Engineer and external engineering teams, the appropriate candidate will be a highly motivated and enthusiastic individual who is comfortable leading on the development of novel mine retrofitting processes. These will include activities such as shaft repairs, shaft furnishing removal, and interfacing with existing or newly specified guidance systems. An understanding of underground environments will be beneficial, for example, knowledge of hydrogeological processes and atmospheric conditions in mines. In addition, prior knowledge of existing mine regulations will be advantageous.

New shaft Projects: The successful candidate will lead the ongoing development of a parametric model for shaft sinking costs which will contribute to overall project cost estimates, and our work with civil-engineering partners. The work will include proactive investigation of novel shaft sinking technologies and assessment of their costs, advantages, and limitations.

Shaft Maintenance: Take ownership of the development of shaft maintenance plans for operational Gravitricity systems. This will involve creating new processes and undertaking optimisation activities that maximise the availability of the energy storage system, whilst also capturing data (for the purposes of this novel system) on the shaft condition, to plan and implement maintenance as required.

Standards and Compliance:

Investigation of mining and other standard requirements in different territories will be conducted to confirm how they will apply to Gravitricity's technology. In some locations, this may lead to a requirement to develop new standards or propose amendments to existing standards to cater for gravitational energy storage. As part of this process, it will be important to maintain a clear relationship between ongoing design choices and the standards landscape. This may differ for existing and new shafts and will also account for operations requiring human access vs normal unmanned operation.



This will be a challenging and rewarding role that will require you to span a range of technical interfaces. This could suit someone with experience in the mining industry but we are open to any background with the right skills. The right person will be very self-driven to work proactively across several areas of the technology, be able to learn fast and be comfortable working outside of their core expertise. An innovative, entrepreneurial attitude is also crucial.

Core Skills and Experience

- Minimum 4 years relevant experience, preferably CEng or equivalent.
- BEng or higher in Mining Engineering, Geotechnical Engineering, or other suitable science background.
- Excellent understanding of engineering first principles, ideally spanning both civil and mining disciplines.
- Proven record of finding creative methods to explore complex new challenges.

Beneficial Skills

- Experience developing procedures for novel technologies.
- Understanding of the design, testing and implementation of civil infrastructure in the mine environment.
- Prior knowledge of European mining regulations relating to shafts and mine hoists.

Benefits

- Chance to make a significant impact within a small and dynamic company developing a technology vital for the global energy transition.
- Competitive salary dependent on experience.
- Modern, flexible company: all staff given option to work 4-day week (pro rata).
- 5% employer pension contribution.
- EMI options scheme.

Application

We are a small company, actively building a diverse and passionate team, and encourage anybody with enthusiasm and know-how to apply, irrespective of your background.

In order to apply please send a CV and a cover letter, explaining why you would be motivated to work with us to recruitment@gravitricity.com