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

Gravitricity is a growing start-up developing a novel large-scale energy storage system which uses solid weights to store electricity in mineshafts using gravity. This is a crucial technology to enable the decarbonisation of our energy systems. We have recently completed a very successful 250 kW demonstrator system and are now focused on the development of our full-scale technology. We are also working on underground hydrogen storage technology that uses the geology of the earth to safely store green hydrogen. As the complexity and scope of our projects build, we need dynamic engineers to drive forward the development of this innovative technology.

Job Brief

A new role has arisen for a civil design or mining engineer to work across a number of key technical challenges arising as we integrate our mechanical technology into the underground environment. This could suit someone with experience in the mining industry, but we are open to any background with the right skills. We are a small dynamic team working closely together, we are fostering a collaborative and innovative work environment. Our team has a previous experience in aerospace, offshore and marine industries. We believe in the power of teamwork and collaboration, and our engineers are encouraged to share ideas, challenge conventions, and contribute to the success of our projects. In this role, you will work closely with external experts and international companies as we have projects spanning across Europe and Asia.

Mineshaft Integration: Working in close collaboration with our engineering team, the appropriate candidate will be a highly motivated and enthusiastic individual who is comfortable leading the development of novel mine retrofitting processes. These will include activities such as foundation design near the shaft head, shaft repairs, shaft furnishing removal, and interfacing with guidance systems. An understanding of underground environments will be beneficial, for example, knowledge of hydrogeological processes and atmospheric conditions in mines.

New shaft Projects: Collaborate on 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 a proactive investigation of novel shaft sinking technologies and an assessment of their costs, advantages, and limitations.

Shaft Maintenance: Involvement in 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: You will be visiting mines both within the UK and internationally in order to investigate civil and mining standards 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

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several areas of 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.
- Direct experience in designing and analysing foundation structures
- 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 are given the option to work a 4-day week (pro rata).
- 6% employer pension contribution.
- EMI options scheme.
- Cycle-to-work scheme
- Extra day of holiday per year of service

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