



## Mine-water Energy Toolkit

### Licenses and Permissions

#### Summary

This section outlines the mine energy licensing and permissions process, from pre-construction of boreholes to project operation, and reports the user experience of mine energy project developers.

We explore policy statements from the regulators, the Coal Authority (as owners of the coal mine workings) and the experience of mine energy project developers.

Regulators and the UK government are reportedly seeking to accelerate mine energy schemes by streamlining regulatory procedures. However, discussions with mine energy project developers reveal that the timeline for the licensing and permissions processes are significantly impeding the development of some mine energy schemes. Developers should allow sufficient time to obtain these in their project plan.

#### Key Points

1. Coal Authority policy supports the development of mine energy schemes.
2. Some mine energy project developers and stakeholders report that the complexity of licensing and the permissions processes at the Coal Authority and the Environment Agency impedes the development of mine energy schemes.
3. To simplify licensing and permissions in the future, the Coal Authority and Environment Agency are developing a common approach.
4. The new licensing and permissions collaboration between the Coal Authority and the Environment Agency is still to finalise its approach (June 2023). It is likely that license and

permission requirements will be similar, but refined in a more streamlined process. To date the Coal Authority and Natural Resources Wales have not directly collaborated in the same way.

5. The Coal Authority and Environment Agency advise that information submitted to both organisations for the purposes of gaining licenses and permissions should be identical. (Variance will cause project delays).

6. The current licensing and permissions requirements are as follows

○ Coal Authority

- **Mine-water Heat Access Agreement (MWHAA)** – a legal agreement that can be varied at different stages of a project. During the project development phases it enables a developer to enter Coal Authority property (mine workings) to drill (drilling permit is included in the MWHAA) and to conduct pump testing

<https://www.gov.uk/guidance/get-a-licence-for-coal-mining#other-activities-which-require-our-consent>

Developers also need to provide the Coal Authority with:

- Mine Gas Risk Assessment

<https://www.gov.uk/government/publications/guidance-on-managing-the-risk-of-hazardous-gases>

- Assessment of Ground Stability

A Deed of Variation is needed for the MWHAA when the project is ready to move from investigation to operation.

○ Environment Agency (England) **or**

○ Natural Resources Wales (Wales)

- **Consent to Investigate a Groundwater Source (GIC)** to allow for investigation to see if there is mine-water. This enables a mine energy project developer to test pump mine-water to see if there is a viable heat supply.

<https://www.gov.uk/government/publications/apply-for-consent-to-investigate-a-groundwater-source/apply-for-consent-to-investigate-a-groundwater-source>Application Form

<https://www.smartsurvey.co.uk/s/XI4ZPK/>

<https://naturalresources.wales/permits-and-permissions/water-abstraction-and-impoundment/groundwater-investigation-consent/?lang=en>

- Developers need to submit a Water Features Survey – with the application for Consent to Investigate a Groundwater Source

<https://www.gov.uk/government/publications/new-ground-source-heating-and-cooling-scheme-form-and-guidance-notes>

For Natural Resources Wales see section 4 in the link below and Appendix 11 <https://naturalresources.wales/permits-and-permissions/water-abstraction-and-impoundment/groundwater-investigation-consent/?lang=en>

- **Water Resources License:** an operational licence that gives permission to abstract mine-water

<https://www.gov.uk/guidance/open-loop-heat-pump-systems-permits-consents-and-licences#get-groundwater-investigation-consent>

<https://naturalresources.wales/permits-and-permissions/water-abstraction-and-impoundment/?lang=en>

Developers need to submit an Hydrogeological Impact Assessment with the application for a Water Resources License

<https://www.gov.uk/government/publications/hydrogeological-impact-appraisal-for-dewatering-abstractions>

- **Environmental Permitting Regulations (EPR) permit:** an operational permit for projects to discharge or reinject mine-water

<https://www.gov.uk/government/publications/standard-rules-sr2010-number-2-discharge-to-surface-water>

<https://naturalresources.wales/permits-and-permissions/water-discharges-and-septic-tanks/discharges-to-surface-water-and-groundwater/?lang=en>

- Local Authority

- Planning permission for drilling. Sometimes not necessary if conducted within a particular time period e.g. 28 days; always check with the local planning department first.
- Highways permissions – need to discuss with the LA Highways department about site access for drilling rig and other vehicles  
Traffic Management plan – submitted with application for Highways permissions

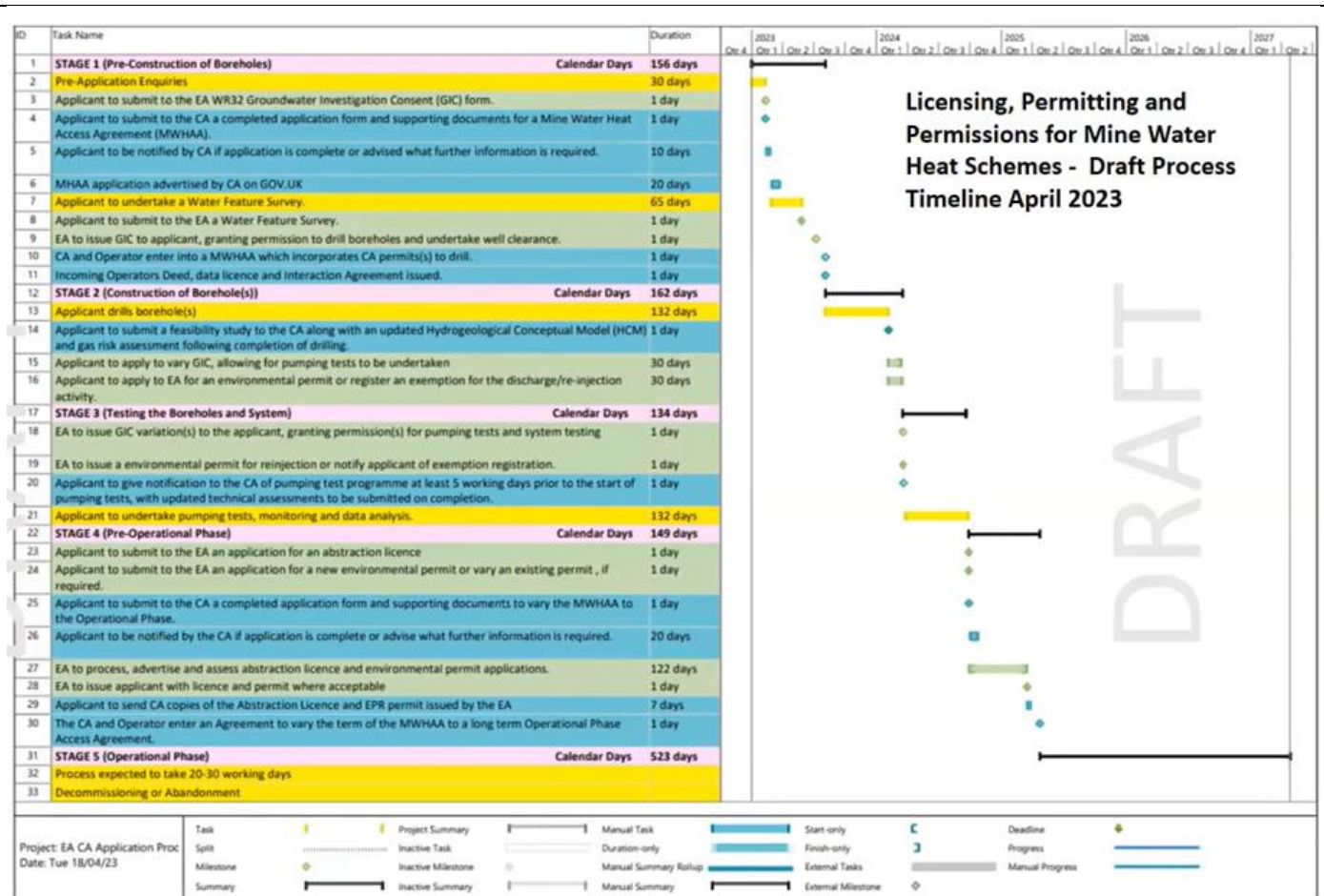
- Land owners

- Permission to access land
- Permission to erect drilling equipment
- Permission to conduct pump tests
- Permission to construct energy centre

- Health and Safety Executive

- Submission of arrangements to meet statutory requirements for drilling and other construction activities <https://www.hse.gov.uk/construction/>

7. The first mine energy scheme in the UK to successfully complete all the permissions and license processes was in Gateshead, completed March 2023. Learnings from this scheme are influencing further revisions of the licensing and permissions process.
8. The Coal Authority and Environment Agency estimate that from start to operation (excluding surface works such as heat network construction) a mine energy project should take in the region of 26 months. This is for all the permissions to be achieved, boreholes drilled and successful abstraction and reinjection.
9. Included in the 26 month timeline is allowance of 195 days to drill and test the boreholes.
10. A study is about to be published that outlines the particular permissions needed for the four separate nations of the UK.
11. New permissions templates are being developed by the Coal Authority and Environment Agency.
12. Prospective developers can initiate mine energy schemes now, despite the template revision process, by contacting the Coal Authority directly.
13. The Coal Authority and Environment Agency have identified a five-stage process to take a mine energy project from inception to operation
  - Pre-construction of Boreholes
  - Construction of Boreholes
  - Testing boreholes and system
  - Pre-operational phase
  - Operational phase
14. Draft Timeline of the 5 stages as presented at the Mine-water Geothermal Energy Symposium – April 20<sup>th</sup> 2023  
<https://www.youtube.com/watch?v=temOD4qG0R4>



The Timeline is not prescriptive and still under development.

15. To plan their mine energy project, developers need a detailed **'Hydrogeological Conceptual Model'** for the mine energy project location, agreed with Coal Authority and Environment Agency – to be updated as new information becomes available during the project. Required information:

- Identification of mine-water target areas e.g. seams and roadways
- Identification of interconnections of underground workings and movement of water
- Design of abstraction, reinjection and monitoring boreholes
- Plan for gaining data from pump testing
- Risk and Health and Safety Assessments

16. In the Northumberland and Durham Coalfields, 23 peer-reviewed Hydrogeological Conceptual Models have already been developed. These are available from the Environment Agency and the Coal Authority.

17. Sources of information to develop Hydrogeological Conceptual Models include:

- Coal Authority
- Environment Agency

- British Geological Survey (BGS) – notably the team at UKGEOS Observatory  
<https://www.ukgeos.ac.uk/glasgow-observatory>
- Independent hydrogeological experts – see reference library authors

### **Mine Energy Licensing and Permissions – Coal Authority and Environment Agency Policy**

Guidance on the new mine energy Licensing and Permissions arrangements can be found by watching the YouTube video titled ‘Licensing and Permitting the First Mine-water Heat Schemes in England

<https://www.youtube.com/watch?v=temOD4qG0R4>

- From the ‘Mine-water Geothermal Energy Symposium’ – April 20<sup>th</sup> 2023
  - Sarah Scott – Senior Advisor (Groundwater), Environment Agency
  - Joanne Eynon – Principal Manager, Mine Heat Licensing, Coal Authority

In this video a timescale of 26<sup>th</sup> months is proposed for regulatory actions to be completed.

### **Mine Energy Licensing and Permissions – Stakeholder experience**

In this presentation at the Mine-water Geothermal Energy Symposium in 2023, David Townsend, CEO of Townrock Energy, expressed concern that the length of time taken for licensing and permissions impeded the development of mine energy projects. See the YouTube video titled ‘Regulation – Ideas for removing barriers and accelerating progress’

<https://www.youtube.com/watch?v=ER1S-Eaii14>

- From the ‘Mine-water Geothermal Energy Symposium’ – April 20<sup>th</sup> 2023
  - David Townsend – CEO Townrock Energy

In the video, David Townsend identifies four concerns about mine energy Licensing and Permissions arrangements:

- the Licensing and Permissions arrangements from the Coal Authority are complicated and take too long and that the new arrangements have not streamlined the process, but made it more complicated and lengthy.
- Data access is difficult. Only the Coal Authority holds the key data and information needed to investigate the potential for developing mine energy schemes. The cost of buying this data and the time it takes for it to be produced are significant obstacles to the development of mine energy schemes.
- While Drilling Permits, including arrangements for managing subsidence risk, are granted rapidly and at low cost by the Coal Authority, Heat Access Agreements take longer as they

tend to be required for all stages of a mine heat scheme from inception of drilling to operation.

- The Coal Authority passes subsidence risks entirely to the mine energy project developer which can prevent project progression.

## **UK Government - Pro-innovation Regulation of Technologies Review - Green Industries UK**

**Government Report – March 2023**

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1147441/Pro-Innovation\\_Regulation\\_of\\_Technologies\\_Review\\_-\\_Green\\_Industries\\_FINAL.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147441/Pro-Innovation_Regulation_of_Technologies_Review_-_Green_Industries_FINAL.pdf)

The UK government has set out to review the regulatory environment around green industries. It is concerned that:

1. Regulation is not facilitating well enough the net zero transition
2. Net Zero objectives are not sufficiently factored into regulatory decision making
3. Net Zero objectives can sometimes conflict with other regulatory functions e.g. noise, health and safety, competition
4. Planning rules impede scaling up of net zero infrastructure developments
5. Regulatory functions are under-resourced
6. Grid and other network connections take too long
7. The UK does not currently have a regulatory and institutional framework enabling strategic planning of the key energy infrastructure

## **Smarter Regulation to Grow the Economy – UK Government – May 2023**

<https://www.gov.uk/government/publications/smarter-regulation-to-grow-the-economy/smarter-regulation-to-grow-the-economy>

“This new framework follows the five regulatory principles set out in the Benefits of Brexit report”

1. “A sovereign approach. We will use our new freedoms to follow a distinctive approach based on UK law, protected by independent UK regulators and designed to strengthen UK markets.
2. Leading from the front. We will focus on the future, shaping and supporting the development of new technologies and creating new markets. We will use our new freedom to act quickly and nimbly and we will pursue high -quality regulation because it leads to better markets.
3. Proportionality. Where markets achieve the best outcomes, we will let them move freely and dynamically. We will pursue non-regulatory options where we can. When strong rules are

required to achieve the best outcomes, we will act decisively to put them in place and enforce them vigorously.

4. Recognising what works. We will thoroughly analyse our interventions based on the outcomes they produce in the real world and where regulation does not achieve its objectives or does so at unacceptable cost, we will ensure it is revised or removed.
5. Setting high standards at home and globally. We will set high standards at home and engage in robust regulatory diplomacy across the world, leading in multilateral settings, influencing the decisions of others and helping to solve problems that require a global approach.”

**Key Actions**

<b>Action</b>	<b>Timeline</b>
1. Apply for licenses and permissions starting immediately at project inception and allowing sufficient time for them to be issued to avoid project delays	Start of Project and throughout the project
2. Engage expert advice from the Coal Authority, Environment Agency, BGS and independent experts, to create a Hydrogeological Conceptual Model for the scheme at the start of the project and keep updating it.	Start of Project and throughout the project
3. Communicate with the Coal Authority and Environment Agency regularly from the start of the project and ensure that both receive the same information.	Start of Project and throughout the project