Ground Source Heat Pump Association Webinar Series 2020

OPEN-LOOP BOREHOLE GSHPs and WSHPs

REGULATION NOW AND IN THE FUTURE

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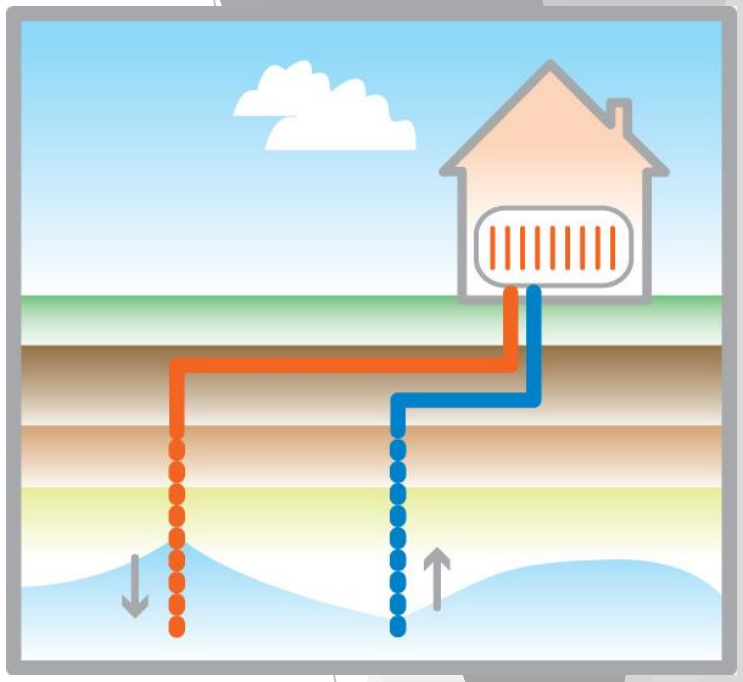
Subjects, to include:



- Which systems are regulated?
- Current regulatory system
- Typical open loop borehole regulatory process
- Typical timeframes
- WSHPs
- The Scottish system (in brief)
- Planned changes to the England & Wales system

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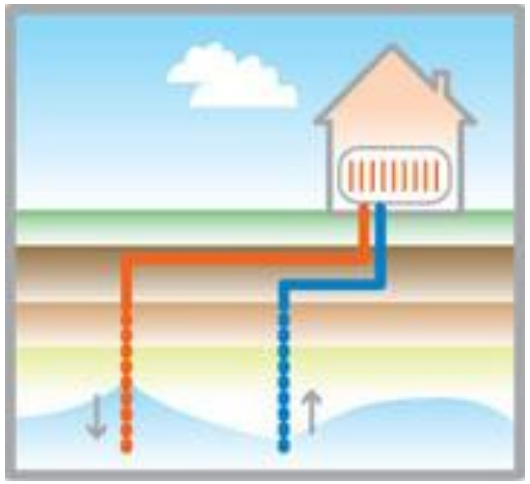
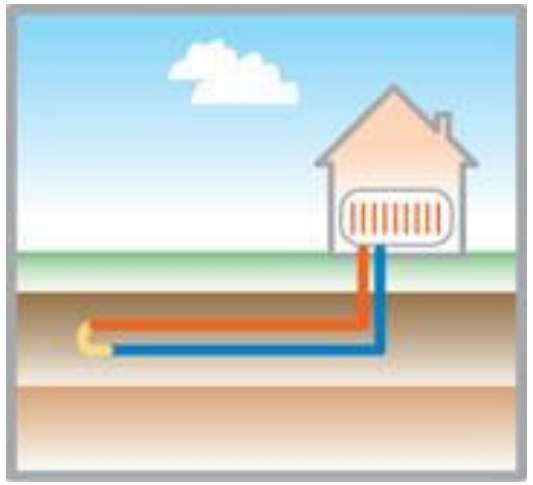
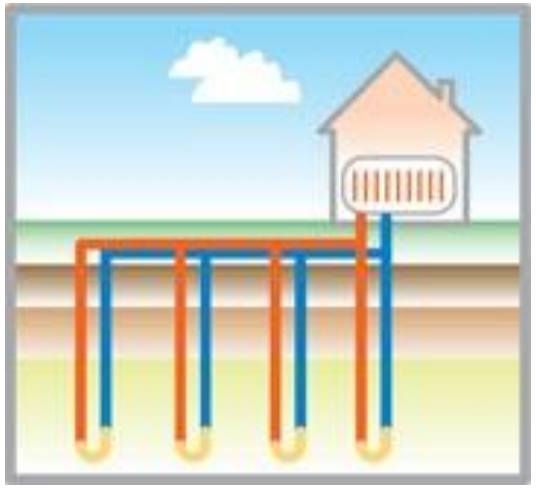
Environment Agency, NRW Regulation



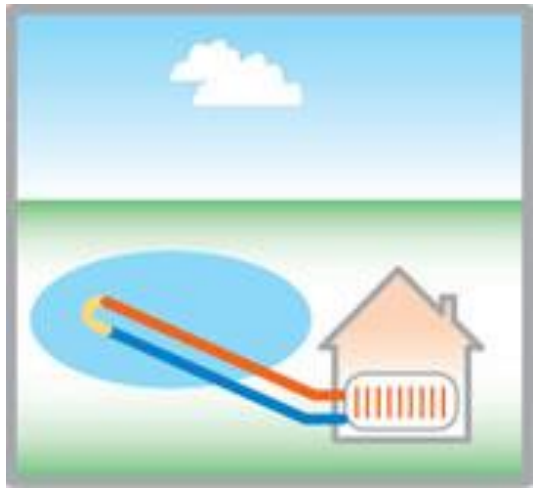
Open-loop. Regulation of all schemes >20m^3/day (SEPA is different)



No Regulation (too many and low or no impact)



No Regulation (Some involvement with large schemes via planning)



Regulation required for river, lake, dock and sea-based schemes

Note also: Coal Authority – permit to drill required into known worked areas

Current regulation of open-loop abstraction/injection

- Abstraction is covered by 1991 Water Resources regulations
  - *You need a LICENCE to abstract more than 20m^3/day*
- Re-injection covered by 2016 Water Quality/ Environmental permit regulations.
  - *You need a PERMIT to re-inject*
- Not a straightforward fit! BUT *important to note that all the UK's regulators strongly support GSHP/WSHP*
- The entire process is under review and due to be brought within the Environmental Permit Regulations EPR
- More on EPR later, firstly the current process:

Typical Regulatory process

- Open-loop boreholes, England (Wales is similar)
- Pre-application. The ‘WR32’ application
- ‘Water-features survey’
- Drilling and formal test-pumping
- Data analysis, hydrogeology, reporting
- Abstraction and environmental (discharge) permit applications
- Environment Agency consultation and determination process

Typical Regulatory timeframe

- Issue WR32 application to Environment Agency or NRW and await their response. Environment Agency issue their requirements for a water features survey. Typically 4 – 6 weeks
- Carry-out water features survey and issue to Environment Agency. They review, and if accepted, issue a ‘Consent to drill and test-pump’. 4 – 6weeks. (non-statutory timeframe)
- Drilling & testing is performed to the Consent requirements
- Analysis of data and preparation of hydrogeological analysis & report
- Completion of application forms for abstraction and injection (Forms, A, B8 and F1). Issue to the Environment Agency with report and supporting data
- Environment Agency may have to advertise in local press and .gov.uk website
- Determination process is statutory timeframe, 4 months if advertised.
  - *SO TOTAL TIME FOR AN OPEN-LOOP APPLICATION, DRILL, TEST AND REGULATORY PROCESS CAN BE 9 -12 MONTHS*

Scotland, The SEPA Process, in brief

Scotland has a different approach. If the GSHP system falls within the needs of General Binding Rules 3 and 17 then no application is needed:

https://www.sepa.org.uk/media/34761/car_a_practical_guide.pdf

In summary:

Any volume of water may be abstracted but the volume of water abstracted and not returned must not exceed $10m^3$ per day (with a means of measuring that volume of water)

The chemical composition of the abstracted water should not be altered including adding or removing any chemicals

If abstractions from mine workings take place care should be taken to prevent oxidation of the water prior to its re-injection

Pipework and other equipment should be maintained so there is no leakage or water.

the activity must not be located within 250 metres of any abstraction of water intended for human consumption

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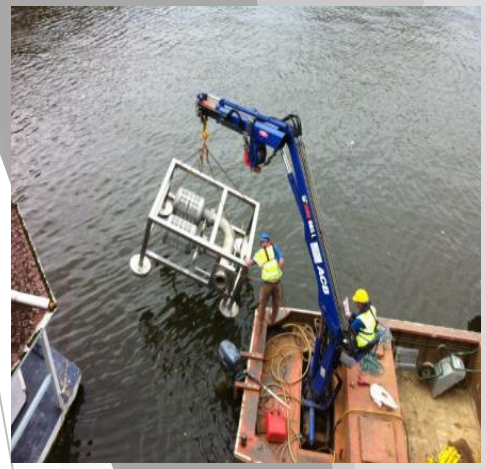
Water Source Heat Pumps



- WSHP regulation is rather different – needs a webinar of its own! England/Wales also covered by Water resource regs and environmental permit. EA & SEPA have different methods
- Pre-application, issue of forms A and B (and D for SEPA) to summarise the proposed river hardware design, flow rates and justification for need for the water
- Response: ‘in principle’ acceptance letter detailing water resource, quality and flood risk issues for that location. These must then be resolved (may need thermal modelling & surveys)
- Issue of full application with supporting analysis, reports, outline designs, maps……etc
- Payment of admin fees (EA about £6k)

CHANGE IS COMING!

- England & Wales. The current system will be brought entirely within EPR. A risk-based approach.
- Consultation on this process due in 2021 from DEFRA. In place 2023 ??
- Abstraction and injection will be included as activities within a single Permit
- Timeframe for the EPR process will be similar to now
- *THERE WILL BE NO TIME LIMIT ON THE PERMIT*
  - But, there will be a 'review' at the normal common end date for that catchment.
  - Nature and frequency of reviews will be catchment-specific
  - The review will assess ongoing risk to the catchment. Need to demonstrate ongoing need for water, efficient use and environmental sustainability. *GSHP systems are very LOW risk*
- Changes to aspects of the permit and some variations will be possible online
- *'Discharge Exemptions' for injection will remain for small and/or very low impact systems*
- *Costs. Currently £135 (abstraction) plus £5800 for permit to re-inject. The EPR single permit cost is likely to be higher. Subject to consultation and 'Strategic review of Charges'*

Questions…..

and thank you!

www.gshp.org.uk

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