

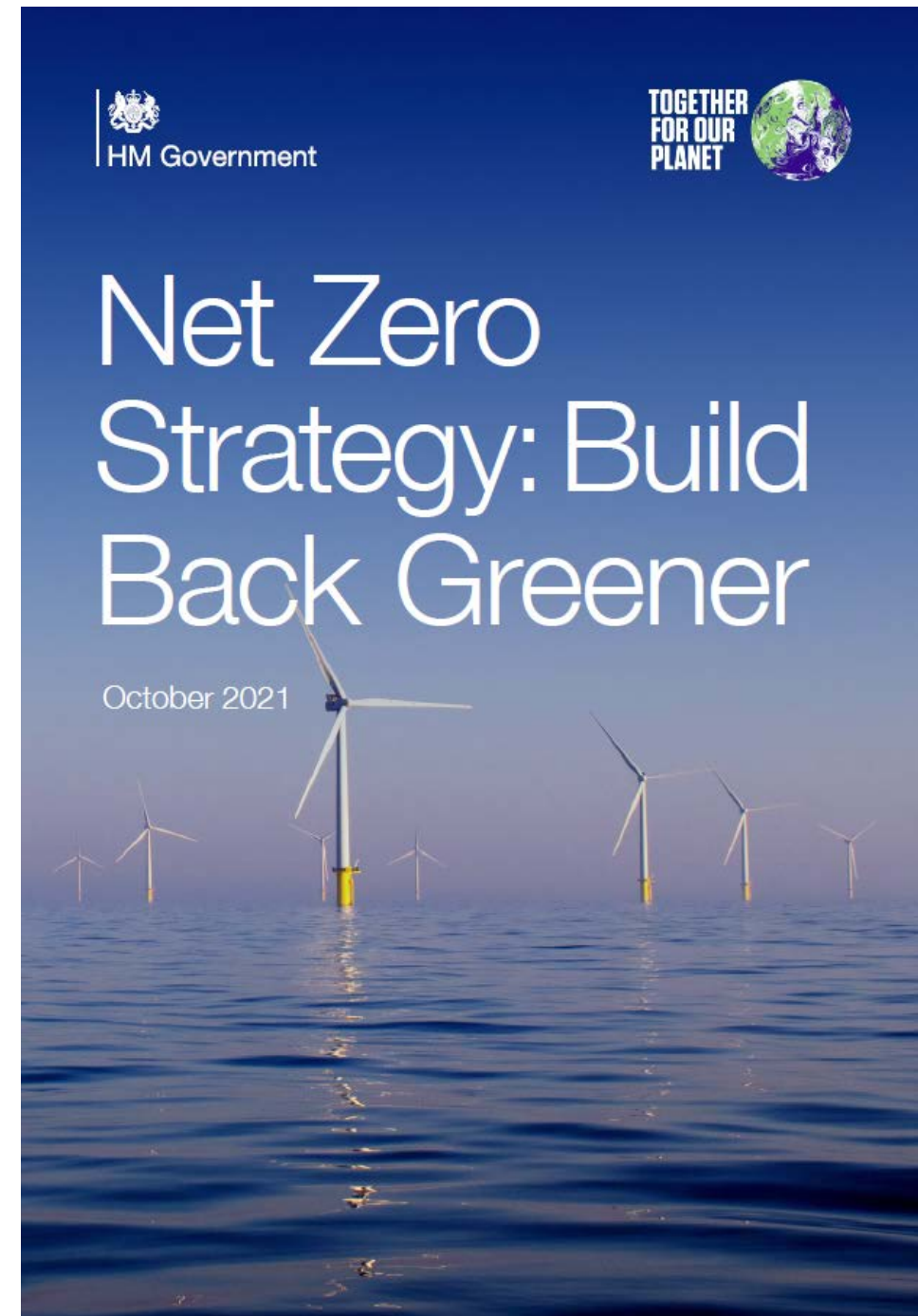
# Ground sourced heat pumps- a regulators perspective

Ross Lowrie  
Environment Agency  
October 2021

# Our role in enabling UK Net Zero

The Environment Agency stands ready to play its part in enabling the transition to a resilient net zero nation by 2050:

- **ensuring new technologies are fit for the future** by supporting innovation through regulation - particularly hydrogen, Carbon Capture and Storage, and nuclear
- **regulating the most carbon intensive sectors** and working with industries to decarbonise industrial clusters
- **minimising waste** and improving energy, water and resource efficiency
- **developing and regulating carbon markets**, including the UK ETS
- **shaping future land use**, ensuring Nature Based Solutions such as trees, peat and wetlands deliver the widest environmental benefits
- **supporting industry-led commitments to decarbonise**, including commitments made by the water and nuclear sectors to be Net Zero by 2030





# Our regulatory role

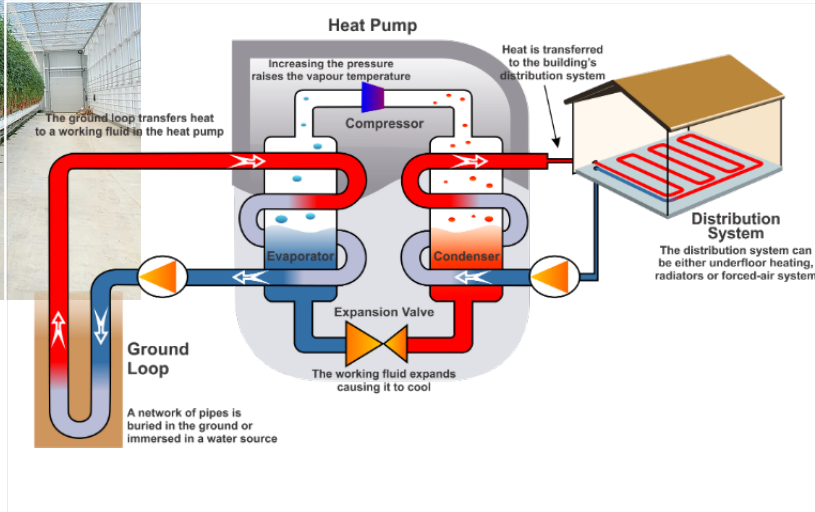
- Our role - Ensure schemes do not adversely impact the water environment, local habitats or resource users
  - groundwater investigation consent (S32),
  - abstraction licence
  - discharge permit.
  
- We don't regulate closed loop systems at all



# Heat sector



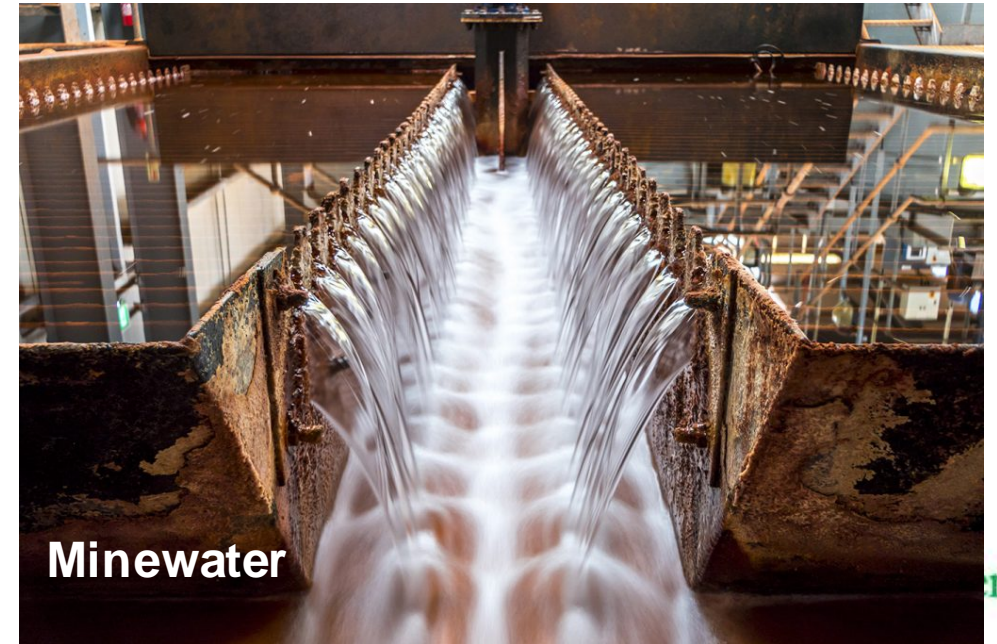
GSHC and heat from waste



Oil and gas



United Downs Deep Geothermal Power



Minewater



# Improve our understanding of the sector

We are working with industry and undertaking research to better understand the sector its impacts, for example;

- Minewater Energy paper (NE LEP)
- Impacts of heating and cooling systems (Nottingham University PhD)
- The potential of UK's geothermal energy resources (BGS)
- Environmental risks from subsurface technologies (EA)
- Environmental risks from re-purposed oil and gas wells (EA commissioning)


# Policy- Environmental Permitting Regulations (1)

- Strong drive by government to reform abstraction
- Abstraction and impounding will move into the EPR regime (2023)
- Existing licences will become transitional EPR permits
- New EPR permits- no end date



# Policy- Environmental Permitting Regulations (2)

- Defra consulting on 9 amendments, including:
- Heat as a pollutant:
  - Apply to closed and open loop systems
  - General binding rule proposed for closed loop



Consultation on Amendments to the Environmental Permitting (England and Wales) Regulations 2016 as applied to Groundwater Activities and related Surface Water Discharge Activities

**Overview**

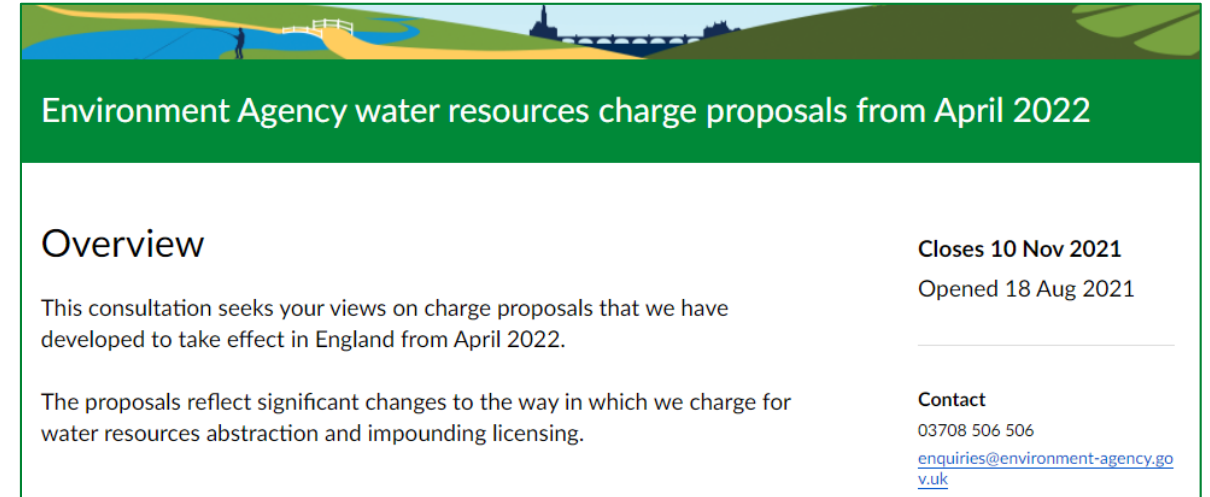
We plan to make some changes to the Environmental Permitting (England and Wales) Regulations 2016 as they apply to groundwater activities and some related surface water discharge activities. This consultation seeks your views on the proposed changes.

**Closes 22 Dec 2021**  
Opened 29 Sep 2021

**Contact**  
07342 705925  
[EPRAmendments2021@defra.gov.uk](mailto:EPRAmendments2021@defra.gov.uk)

# Strategic Review of Charges (SRoC) Consultation

- Water Resources charges
- Last review 1993
- Currently: £135
  
- New charges consider:
  - volume abstracted and availability
  - costs of all services we provide
  - not specific to GSHC industry
  
- We are consulting – give us your views – and evidence!



Environment Agency water resources charge proposals from April 2022

**Overview**

This consultation seeks your views on charge proposals that we have developed to take effect in England from April 2022.

The proposals reflect significant changes to the way in which we charge for water resources abstraction and impounding licensing.

**Closes 10 Nov 2021**  
Opened 18 Aug 2021

**Contact**  
03708 506 506  
[enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk)





<b>Activity description Volume Band is Mega litres/Year</b>	<b>Proposed charge</b>	<b>Normal variation</b>	<b>Substantial variation</b>
<b>Full licence SW &amp; GW :Volume Band 0.001 – 50 :Water Available</b>	£2,150	£1,075	£1,935
<b>Full licence SW &amp; GW :Volume Band 50.001 - 120 :Water Available</b>	£4,301	£2,150	£3,871
<b>Full licence SW &amp; GW :Volume Band 120.001 - 1400 :Water Available</b>	£10,752	£5,376	£9,677
<b>Full licence SW &amp; GW :Volume Band 1400.001 + :Water Available</b>	£21,505	£10,752	£19,354



## Table shows Full Licence Application – Restricted Water Available new fees

<b>Activity description</b> <b>Volume Band is Mega litres/Year</b>	<b>Proposed charge</b>	<b>Normal variation</b>	<b>Substantial variation</b>
<b>Full licence SW &amp; GW :Volume Band 0.001 - 50 :Restricted Water Available</b>	£3,662	£1,831	£3,295
<b>Full licence SW &amp; GW :Volume Band 50.001 - 120 :Restricted Water Available</b>	£7,323	£3,662	£6,591
<b>Full licence SW &amp; GW :Volume Band 120.001 - 1400 :Restricted Water Available</b>	£18,308	£9,154	£16,477
<b>Full licence SW &amp; GW :Volume Band 1400.001 + :Restricted Water Available</b>	£36,616	£18,308	£32,955



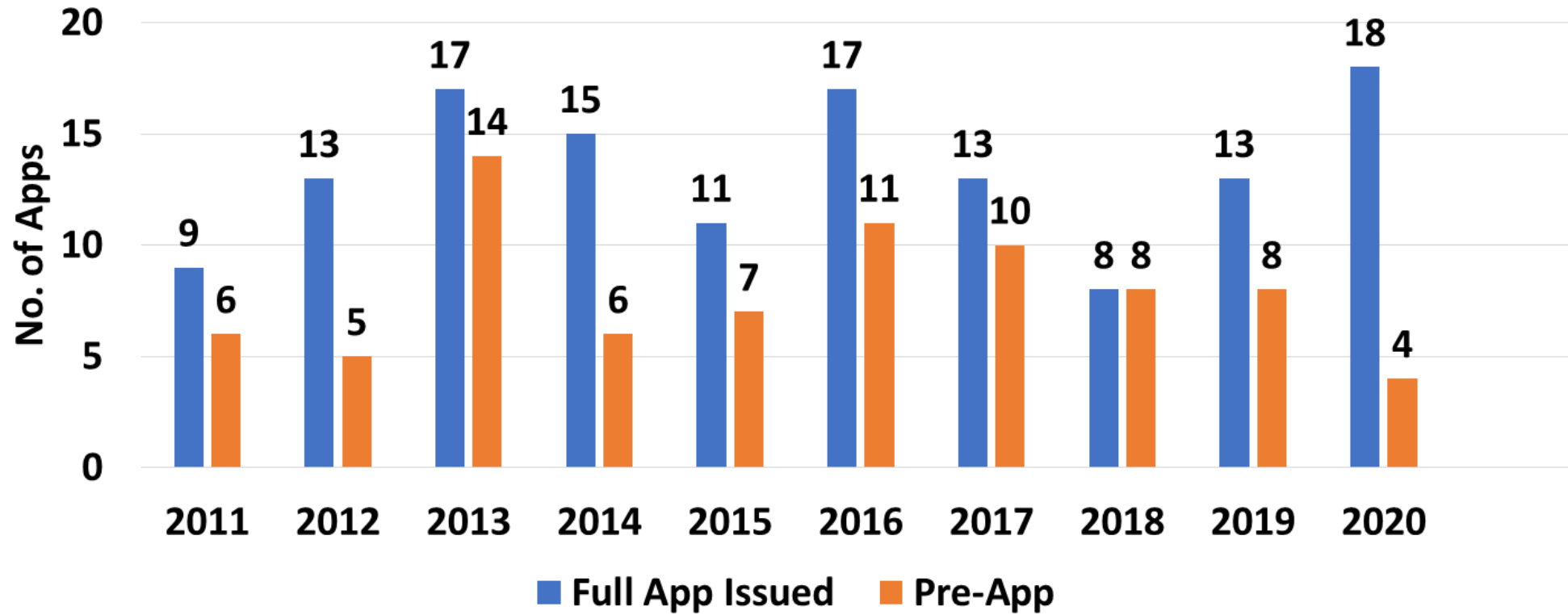
# Examples

- **Example 1** – Volume – 0.001 - 50 ml/yr – Water available
- 100% (of £5,914) charged at £5,914 – WQ discharge
- 10% (of £2,150) charged at – £215 - Abstraction
- = **£6,129.00**
  
- **Example 2** – 120 - 1400ML/ year – Water available
- 100% (of £10,752) charged at – £10,752 – Abstraction
- 10% (of £5,914) charged at £591 - WQ Discharge
- = **£11,343.00**

# Review of



### Full Applications and Pre-Apps 2011-2021



# Permissions needed



- Surface water abstractions require a licence if the abstraction is  $>20\text{m}^3/\text{day}$ .
- Groundwater if the system is open loop and if the abstraction is  $>20\text{m}^3/\text{day}$ .



- A Permit will be required for discharging water into a borehole, into a river or at ground surface where it does not meet the exemption criteria.



# GiC permissions



- This consent allows you to find out what water is available and whether it's suitable for your needs.
- If your proposed abstraction is deemed successful and you want to continue to abstract more than 20m<sup>3</sup> of water a day, you will need to apply for an abstraction licence.

# What makes a 'complex' groundwater application?





# What makes a 'complex' surface water application?





