

Entrant Handbook

Catalyst Stream

Version 1.2, 13 October 2021



Table of Contents

1. Introduction	3
1.1 About this handbook.....	3
1.2 Ofwat Innovation Fund overview	4
1.3 Breakthrough 2 delivery partners.....	6
2. About the Catalyst Stream	7
2.1 Timeline and Key Dates.....	7
2.2 What you can win	8
2.3 Intellectual property rights (IPR)	8
3. Entry requirements	11
3.1 Lead entrant.....	11
3.2 Funding requested	11
3.3 Financial requirements	11
3.4 Terms and conditions	12
4. What we are looking for	13
4.1 Areas for innovation.....	13
4.2 Characteristics of entries.....	14
4.2.1 Entry Delivery Timelines.....	14
4.2.2 Approach to Risk	14

4.2.3 Monitoring and risk management	15
4.2.4 Entry value and delivery costs	15
4.2.5 Partnerships	15
5. Entering the Catalyst Stream	17
5.1 The entry process	17
5.2 Entry questions, assessment criteria and guidance.....	20
5.2.1 Unassessed questions	20
5.2.2 Assessed questions and assessment criteria.....	27
5.2.3 Assessment criteria weighting	40
5.3 Reasonable adjustments and accommodations	40
6. Requirements for successful entries	41
7. More information and support for your entry	43
8. Appendices	45
Appendix 1 Project Stages.....	45

1. Introduction

1.1 About this handbook

Welcome to the second round of the Water Breakthrough Challenge (**'Breakthrough 2'**) Entrant Handbook for the Catalyst Stream. This document, along with [the terms and conditions](#), will provide you with all the information you need to enter the Catalyst Stream of Breakthrough 2. Information about the Transform Stream can be found in the [Transform Entrant Handbook](#). The handbook includes the following information:

- background to the Ofwat innovation fund ('the Fund') including Breakthrough 2;
- information about the Catalyst Stream, who can enter and how;
- what is required to take part in the Catalyst stream; and
- what support is on offer for entrants to the Catalyst stream.

All entrants should read this entire handbook along with the full terms and conditions, which are the rules entrants are required to agree to in order to take part before entering the Catalyst Stream.

We have also created a list of [frequently asked questions](#) (FAQs), which highlight information from this handbook and other resources to answer the most commonly asked questions about the Fund and Breakthrough 2. If you have read the handbook and the FAQs and have more questions, please contact the team at waterinnovation@nesta.org.uk.

1.2 Ofwat Innovation Fund overview

Ofwat has established a £200 million Innovation Fund to help the England and Wales water sector to grow its capacity to innovate and enable it to better meet the evolving needs of customers, society, and the environment.

The Fund aims to achieve this by supporting ambitious water company¹ initiatives that demonstrate bold new approaches to innovation, going beyond the sector's business-as-usual innovation practices, and that can create significant value for customers, society, and the environment.

In round one of the Fund, we ran two competitions:

- The **Innovation in Water Challenge** (IWC) which aims to encourage new ways of working and improve collaboration and partnerships from within and outside the water sector. The 11 winners of the IWC were announced on 21 April 2021. [You can read about the winners on the challenge website.](#)
- The **Water Breakthrough Challenge**, which provides an opportunity for water companies, in partnership with other organisations, to receive funding for innovative initiatives that go beyond business as usual to deliver tangible benefits for customers, society and the environment. The 9 winners of the first round of the Water Breakthrough Challenge were announced on 30 September 2021. [You can read about the winners on the challenge website.](#)

In response to feedback from the water sector, Breakthrough 2 will bring together elements from the first round of both the Water Breakthrough Challenge and the Innovation in Water Challenge. This will provide a unified and streamlined process for water companies in England and Wales and their partners to access the Fund. Water companies in England and Wales and their partners will be able to bid for funding through two streams: the Catalyst Stream and the Transform Stream.

The **Catalyst Stream** aims to encourage new ways of working that go beyond business-as-usual innovation practices in the water sector, in particular, increasing and improving collaboration and building partnerships from within and outside the water sector. Approximately £5 million is available for entries seeking funding of between £100,000 – up to £1 million.

¹ In this document, reference to a 'water company' means a water and/or sewerage undertaker holding an appointment under Chapter 1, Part 2 of the Water Industry Act 1991.

The **Transform Stream** aims to spark ambitious innovation and enable new approaches and ways of working; equipping the water sector to address the big challenges facing the sector, driving far-reaching and long-lasting benefits to customers, society and the environment across England and Wales now and into the future. Approximately £34 million is available for entries seeking funding of between £1 million – up to £10 million.



For more information on the Fund, please visit [our website](#). The Fund is currently in a pilot period. It is expected that future rounds of competitions will continue until 2025.

1.3 Breakthrough 2 delivery partners

The Fund is being delivered collaboratively by Ofwat together with Nesta Challenges, supported by Arup and Isle.



Ofwat is the Water Services Regulation Authority for England and Wales. [Read more about Ofwat's duties on their website.](#)



[Nesta Challenges](#) exists to design and run challenge prizes that help solve pressing problems that lack solutions. We shine a spotlight where it matters and incentivise people to solve these issues. We are independent supporters of change to help communities thrive and inspire the best placed, most diverse groups of people around the world to take action. We support the boldest and bravest ideas to become real, and seed long term change to advance society and build a better future for everyone. We are part of the innovation foundation, [Nesta](#).



[Arup](#) is an independent professional services firm of designers, planners, engineers, architects, consultants, and technical specialists



[Isle](#) is a global team of independent scientists, engineers, business and regulatory experts with a common drive to make a positive environmental, social and economic impact through the advancement of innovative technologies, solutions and practices

2. About the Catalyst Stream

The **Catalyst Stream** aims to encourage new ways of working that go beyond business-as-usual innovation practices in the water sector, in particular, increasing and improving collaboration and building partnerships from within and outside the water sector.

2.1 Timeline and Key Dates

The Catalyst Stream of Breakthrough 2 uses a streamlined, single-stage entry process, proportional to the risk and value of the entries being submitted.



Entries to the Catalyst stream open on **11 October at 9am (BST)**, and they close on **8 December 2021 at 12 noon (GMT)**.

Following the closing date on 8 December at 12 noon (GMT), entries will be checked for eligibility and assessed. A diverse portfolio of entries that best meet the relevant assessment criteria (detailed in **5.2.2 assessed questions and assessment criteria**) will then be shared with an independent judging panel for its review.

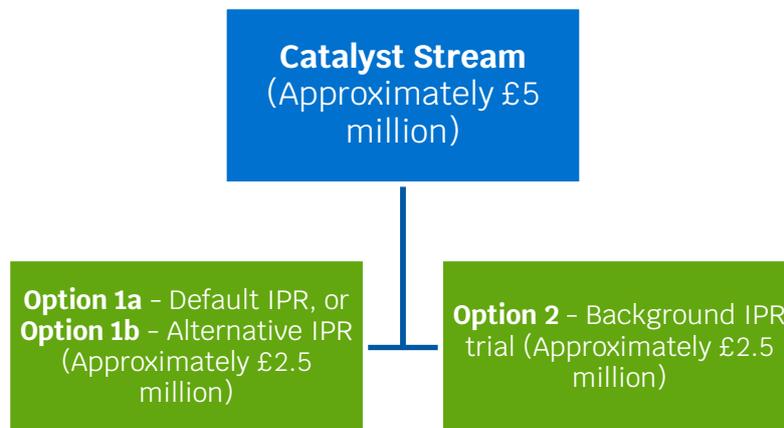
The judging panel will convene in February 2022. The judging panel will recommend to Ofwat a diverse portfolio of entries for funding that they consider best meet the relevant assessment criteria and have the potential to deliver tangible positive benefits for customers, society, and the environment. Ofwat will then make the final decision on whether to award funding.

Further details on the selection process can be found in **5.2.2 Entry questions, assessment criteria and guidance** below. If you are successful in winning funding, you can expect to be notified by mid-March 2022.

2.2 What you can win

Through the Catalyst Stream, there is approximately £5 million of funding available in total for successful entries. Individual entries can bid for funding of between £100,000 and up to £1 million.

For Breakthrough 2, based on the responses to the August 2021 [IPR consultation](#), we have decided to split the available Catalyst Stream funding. Our current intention is to make approximately half of the funding for the Catalyst Stream (approximately £2.5 million) available for a background intellectual property rights (IPR) trial (option 2). The other half of the funding for the Catalyst Stream (approximately £2.5 million) will be made available for the default (option 1a) or alternative IPR arrangements (option 1b). More detail on the IPR approach for the Catalyst Stream is provided below.



2.3 Intellectual property rights (IPR)

In order to receive funding from Breakthrough 2, you will need to agree to the IPR conditions within [the terms and conditions](#). As we indicated above, following the August 2021 [IPR consultation](#) we have decided to proceed with a background IPR trial for the Catalyst Stream of Breakthrough 2. As a result, entrants will have two IPR options to choose from when entering the Catalyst Stream:

Option 1 – Default or Alternative: this option requires, either,

- **1a (Default IPR):** to the extent that it is required for the use of the foreground IPR, background IPR is licensed on a non-exclusive, perpetual, sub-licensable, irrevocable, royalty-free licence in accordance with clause 4.4 of the [Terms and Conditions](#); or
- **1b (Alternative IPR):** a request for alternative IPR terms may be made in accordance with clause 4.6. Requests for alternative IPR arrangements will be considered on a case-by-case basis by Ofwat. In setting out alternative IPR arrangements, you must be able to meet the following conditions:

- i. The entry will not result in restricted benefits to all customers of water companies; and
- ii. Demonstrably, the alternative arrangements will not result in additional costs to customers.

Entrants should not select option 1 if they are only proposing to charge a fee or any royalties for the use of background IPR. Instead, entrants should submit their applications using **option 2** of the Catalyst stream.

Option 2 – Background IPR Trial: a request for the background IPR trial terms may be made in accordance with clause 4.5. A licence fee to be charged for the use of specific background IPR, in accordance with the terms and conditions, if it is needed to receive the benefit of the foreground IPR. You will be asked to confirm if you intend to charge for some or all of the background IPR that is needed for use of the foreground IPR.

For the purpose of the background IPR trial, the terms and conditions differentiate between general background IPR and specific background IPR. Specific background IPR is background IPR which has been specifically identified in the entry and is such background IPR that may be licenced on terms including a royalty and/or other appropriate forms of remuneration. However, we recognise that specific background IPR may require adjustment during the project and therefore the terms and conditions allow for the possibility of later designation, at Ofwat's discretion. General background IPR is any and all background IPR that is not specific background IPR.

In your entry, you will be asked to set out how this arrangement will not result in restricted benefits to customers of water companies, and to confirm that, ultimately, any additional costs to customers in respect of charges for the use of background IPR will represent value for money for customers. In all instances you must set out how and why you consider that the proposal or the process by which you may charge future users is **fair, reasonable and non-discriminatory**. We recognise that it may be more difficult to provide this information for projects that are at an early stage of development. Where this is the case, you should clearly state what information you can and cannot provide at the point of submitting your entry and why. More details are set out in section D of the unassessed entry questions below.

In deciding which is the best option for your project, we encourage entrants to consider the extent to which the use of **background IPR** is core to realising the benefits of **foreground IPR** developed during their entry.

In respect of all options available, you will be required to answer questions on your IPR proposals. We may seek further clarification on these proposals following the submission of your entry.

As detailed above of the approximately £5 million available, our current intention is to make approximately £2.5 million available to bid for under both options 1 and 2. Through

both IPR options 1 and 2 of the Catalyst stream we would like to see a mix of entry types and entries at different stages (see section 8.1 – Project stages).

3. Entry requirements

There are four eligibility criteria to the Catalyst Stream of Breakthrough 2, detailed below:

- lead entrant;
- funding requested;
- financial requirements; and
- terms and conditions.

3.1 Lead entrant

The lead entrant to Breakthrough 2 must be one of the [licensed regional water only and water and wastewater companies or new entrant water and wastewater companies \(NAVs\)](#) in England and Wales. We strongly encourage lead entrants to enter Breakthrough 2 in partnership or consortia.

3.2 Funding requested

The minimum amount of funding that can be requested from the fund is £100,000, and the maximum that can be requested is up to £1 million.

3.3 Financial requirements

Only 90% of each entry's financial costs will be provided by funding from Breakthrough 2. The remaining 10% must be provided by entry partners as a mandatory 10% financial contribution. We do not consider that customers should bear all the risk of initiatives funded through the competition and believe that this also encourages strong project management. Entry partners have the flexibility to decide how the remaining 10% is funded, as long as it is not funded by charges to water customers in England and Wales. There is no requirement for this contribution to be shared equally between partners. Entry partners may also consider how they could bring funding from other sources.

In the entry form, in Question C and 3.4, entrants need to specify the source of funds for their contributions. We welcome any additional financial and/or non-financial contributions beyond the minimum 10%. Non-financial contributions should be excluded from the total financial cost of the project.

We are open to initiatives that have successfully secured additional external public or private funding.

Entrants must confirm that there is no duplicative or double funding and that they are not restricted by their current funding source when applying for additional and alternative funding through this Fund.

3.4 Terms and conditions

All entry partners must agree to abide by [the terms and conditions](#).

4. What we are looking for

4.1 Areas for innovation

We are looking for your ideas that address the big challenges facing the water sector – guided by our five strategic innovation themes (below). We aim to fund a wide range of entries that will showcase a diverse mix of innovative ways of working and solutions.

Our five strategic innovation themes are:



1. Responding and adapting to climate change, including how to meet the sector's ambition of net-zero emissions.



2. Restoring and improving the ecological status of our water environments, protecting current and future customers from the impacts of extreme weather and pollution.



3. Understanding long-term operational resilience and infrastructure risks to customers and the environment, finding solutions to mitigate these in sustainable and efficient ways.



4. Testing new ways of conducting core activities to deliver wider public value.



5. Exploring the opportunities associated with open data, stimulating innovation and collaboration, for example, encouraging new business models and service offerings that benefit customers, including those in vulnerable circumstances.

We have identified a number of **innovation enablers** that will be particularly critical to growing and sustaining the water sector's capacity to innovate. The Fund will consider supporting initiatives that demonstrate and further strengthen these enablers, including but not limited to:

- **Collaboration:** building and strengthening collaboration and partnerships across companies, the supply chain and outside the water sector.

- **Openness:** to sharing data, insights and ideas within the water sector and with other sectors.
- **Adaptability:** flexibility and openness to trying out new ways of working.
- **Innovation risk management:** delivering value from all innovation projects, particularly more experimental projects, even if they fail.
- **Scalability & Deployability:** improving the ease of scaling up and rolling out of proven innovations within the sector.
- **Long-term view:** taking both a longer-term and broader perspective to better meet the evolving needs of customers, society, and the environment.

4.2 Characteristics of entries

4.2.1 Entry Delivery Timelines

We are open to a wide range of project delivery timelines, from delivery periods of less than a year to multi-year periods which continue beyond 2025. There is no requirement for project delivery to be completed within the current asset management plan (AMP) period. We expect entries to the Catalyst Stream that are awarded funding to start within 6 months of being notified of the award.

4.2.2 Approach to Risk

We are seeking truly innovative entries and encourage water companies to adopt an open risk appetite within their Fund entries, supported by strong risk management with a clear plan to share learning regardless of the outcome. We recognise that some projects may not deliver the expected direct benefits, but by taking risks and sharing learning across the water sector, customers will stand to benefit.

Entrants should be able to recognise and respond appropriately to issues and opportunities as they arise. This may include:

- Taking decisions about how to adjust delivery if the initial benefits can no longer be realised.
- Adopting an approach of 'early failure'.
- Thinking widely about possible benefits from their initiative.
- Considering how learning and insights from the delivery of their initiative can best provide value across the sector.

4.2.3 Monitoring and risk management

Entrants will be asked to provide information on their approach to risk in their entry – see question 3.5.1 of the entry form. Entrants will be responsible for:

- Managing delivery and reviewing progress against milestones.
- Adapting delivery to realise the intended impact most efficiently and effectively.
- Sharing significant changes to delivery with Ofwat and its delivery partners. Ofwat and its delivery partners will monitor the progress of successful entries, including seeking updates at delivery milestones. The monitoring and involvement of Ofwat and its delivery partners will be proportionate to the size and risk of initiatives. In all cases, winning entrants will be responsible for reviewing progress and deciding the best course of action for their entry to deliver its intended impact.

In exceptional circumstances, Ofwat and its delivery partners may intervene if we have concerns that a project is moving materially away from delivering on its intended impact, or there is any concern about misuse of funds.

4.2.4 Entry value and delivery costs

Entrants to the Catalyst Stream can bid for between £100,000 and up to £1 million.

We expect entries to demonstrate cost efficiency and good use of customer money, with a clear case for any costs included in the budget.

Reasonable costs are eligible to be funded, including dedicated staff time and fair associated overheads.

The budget, set out in response to Questions C and 3.4.1, should be inclusive of applicable taxes which are not recoverable, reflecting the true costs of the initiative. Where taxes are fully recoverable, such as VAT, costs should be shown net of the recoverable amount. Taxes that are not recoverable should be included, for example, customs duties payable on goods imported into the UK.

4.2.5 Partnerships

We particularly encourage entries that involve partnerships and collaboration between water companies, including NAVs, as well as with organisations in the water sector supply chain and beyond.

- **If you are a water company, including NAVs** - you are strongly encouraged to explore opportunities for new partnerships and consortia, including by signalling opportunities for

partnerships on your website and social media channels. You can partner with anyone you wish, including internationally - including other water companies, supply chain partners, new start-ups, SMEs, academia, local authorities, water companies outside of England and Wales, and water supply and/or sewerage retailers. You may also wish to review the supplier pitch videos hosted on our [Water Innovation Directory](#). Please note that it's your responsibility to carry out any checks and due diligence on partners.

- **If you are not a water company** - Breakthrough 2 is an opportunity to reach out to one or more water companies to explore the possibility of working together.

If you are new to the water sector, you may wish to email contact@waterinnovation2050.org.uk to get in contact with a water company about your innovative idea or solution. This central inbox is managed by an alliance of 19 UK water companies. We recommend you read their innovation strategy and prioritisation exercise, available on the [Water Innovation 2050 website](#) before contacting water companies to understand their innovation priorities. A full list of England and Wales water companies that can be contacted to explore new partnership opportunities can be found on [our website](#).

You may also wish to register your interest in recording a pitch video for our [Water Innovation Directory](#) as a way to showcase your innovation to interested water companies.

5. Entering the Catalyst Stream

This section outlines everything you need to enter into the Catalyst Stream of Breakthrough 2, including:

- The entry process.
- Entry questions, assessment criteria, weighting and guidance:
 - Eligibility criteria
 - Unassessed questions
 - Assessed questions
- Reasonable adjustments and accommodations.

5.1 The entry process

We have worked to ensure the entry process is as efficient and practical as possible, allowing for ease of access for all water companies, in particular smaller companies.

The steps of the entry process, detailed below, are:

- A. Entry period
- B. Eligibility screening
- C. Assessment
- D. Judging
- E. Ofwat Decision
- F. Award
- G. Feedback

A. Entry period

We set out in **5.4 the entry questions and assessment criteria**, together with guidance on how to complete the entry process. All entries must be submitted by **8 December at 12 noon (GMT)** using the online entry form available via [the website](#). The lead entrant will need to submit this form.

Before submitting your entry, please ensure that:

- You and your partners have read and understood the Breakthrough 2 [terms and conditions](#) and [privacy policy](#), including the [Ofwat privacy policy](#).

- Your entry is aligned with one or more of the five Ofwat strategic innovation [themes](#).
- You have followed good procurement principles, performed your due diligence on your partners and accepted any risk and liability from going ahead with them.
- You and your partners have set out in your entry how a 10% minimum financial contribution will be provided for (at least 10% of the financial cost of the entry will be funded from sources other than the Fund).

The entry form is available here as [a Word document](#) to help you to develop and collaborate on your answers ahead of completing the online form. If entrants wish to work on more than one draft on the online entry form during the entry period, please contact waterinnovation@nesta.org.uk for assistance.

Information you provide in your entry may be shared with our partners (including the judges and any due diligence providers) for the purpose of administering Breakthrough 2. For more information on how we use your data, please see the Breakthrough 2 [privacy policy](#) and the [terms and conditions](#).

B. Eligibility screening

Entrants are required to meet the eligibility criteria as set out in **3. Eligibility**.

When entries close, an eligibility screening will be conducted to ensure entries all meet the eligibility criteria.

C. Assessment

All eligible entries will be assessed by assessors against each of the following three assessment criteria:

1. Positive impact for water customers, society, and the environment;
2. Innovation enablers and innovative solutions; and
3. Capacity, capability, and commitment to deliver.

Assessors will analyse and score all assessed entry questions against the set assessment criteria. Scoring will be between 1 and 5 (5 being the highest). These scores are weighted equally across all questions. The assessed entry questions, assessment criteria and weighting are set out in **5.4 and 5.5 below**.

A moderation meeting will be held to discuss and recommend entries to put forward to the judges. This moderation meeting will ensure that all assessors opinions have been captured and a consistent view on the merits of each entry is provided. Whilst scoring will form part of this process, Ofwat will consider the opinions of the assessors, and will also seek to ensure that

a diverse portfolio of entries, in terms of entry themes and types of projects, are put forward for review by the judges.

D. Judging

An independent panel of judges will review the entries put forward following the assessment process. The judging panel will review the entries individually, assessing the entries using the same criteria as the assessors. The judging panel will then convene to discuss entries and provide a recommendation to Ofwat which entries they agree best meet the assessment criteria and offer a diverse portfolio for funding.

E. Ofwat Decision

Ofwat will make the final decision on which entries should receive funding. In making its decision, Ofwat will consider the views of assessors and judges on which entries best meet the assessment criteria and offer a diverse portfolio for funding.

Ofwat intends to publish this decision and its reasons for awarding funding. Ofwat will take account of entrants' preferences in relation to the confidentiality of their entries.

F. Award

Entries should expect to be notified if they have been successful in being awarded funding by mid- March 2022.

G. Feedback

After the winners have been announced, high-level feedback will be provided to all lead entrants outlining why their entry has not been successful. Feedback will be given against each of the three assessment criteria and, where appropriate, provide guidance on areas of improvement against each of them. Scores provided by the assessors and the judging panel will not be included in the feedback. As mentioned above the scoring forms only a part of the overall assessment process.

5.2 Entry questions, assessment criteria and guidance

There are three types of entry questions in the entry form:

- **Eligibility criteria** – these are questions that will be used to determine eligibility (as set out in 3.1).
- **Unassessed questions** – these questions are unassessed and will be used to manage your entry, support portfolio decision making, enable monitoring and evaluation of the Challenges, and create publications and announcement materials if your entry is successful.
- **Assessed questions**
 - **General information** – these questions provide general information about the entry but are not assessed against the assessment criteria by the judges and assessors
 - **Criteria specific questions** – this section is assessed against the assessment criteria by the judges and assessors.

5.2.1 Unassessed questions

The following unassessed questions are included in the entry form.

Question Category	Question #	Question	Question Guidance	Word Count
A Entrant Details	i	Which organisation is leading this entry?	Please select the name of the lead entrant organisation. The lead entrant must be one of the licensed regional water only and water and wastewater companies or new entrant water and wastewater companies (NAVs) in England and Wales.	N/A
	ii	Please provide the mailing address of the lead organisation.	This may be used for correspondence if the entry is successful.	N/A
	iii	Name (s) of Partner Organisation (s)	Please provide a list of the legal name(s) of all partner organisations involved in this entry excluding the lead entrant. Please also provide an email address for the lead contact at each partner organisation.	N/A

B	Main Contact Details	i	Name of main contact detail	You must designate one person from the lead entrant as the main contact. This person will be the primary point of contact with the Breakthrough 2 delivery partners. This is the person who we will contact for all matters relating to your entry. Please ensure that the information provided below relates to the same person.	N/A
		ii	Main contact job title		N/A
		iii	Main contact's work email address(es).		N/A
		iv	Main contact's work telephone number.		N/A
C	Funding	i	What is the amount you are requesting from the Fund?	Please provide the value of funds requested from Breakthrough 2 in £GBP in nominal (today's) prices, excluding the 10% compulsory financial contribution. The amount of funding requested must be between £100,000 and up to £1,000,000.	N/A
		ii	What is the value of your 10% mandatory financial contribution?	Please provide the value of the 10% mandatory financial contribution entry partners have committed to contribute to the entry if it is successful in being awarded funding in £GBP in nominal (today's) prices. The mandatory 10% contribution should be no less than 10% of the total financial cost of the entry. Please exclude any additional financial or in-kind contributions (these should be covered in Civ).	N/A
		iii	What is the value of any in-kind or financial contributions excluding the 10% mandatory financial contribution relevant to the project?	Please provide the value of any in-kind or financial contributions from any source beyond the mandatory 10% financial contribution in £GBP in nominal (today's) prices.	N/A
		iv	What is the total cost of your project?	Please provide the total cost of the project in £GBP including workstreams and funds not covered by the Breakthrough 2 entry and any financial and in-kind contributions which are financially quantifiable. Please provide this in nominal (today's) prices (including inflation assumptions).	N/A

				These figures should be inclusive of applicable taxes which are not recoverable, reflecting the true costs of the entry. Where taxes are fully recoverable, such as VAT, costs should be shown net of the recoverable amount. Taxes that are not recoverable should be included, for example, customs duties payable on goods imported into the UK.	
D	Intellectual Property Rights	i	Which IPR option are you choosing?	1a. Default IPR 1b. Alternative IPR 2. Background IPR Trial	N/A
		ii	Default IPR	Appears only if answer to Di. is Default . Please explain how you will comply with the default position at section 4 of the terms and conditions, including detail of: <ul style="list-style-type: none"> • whether the funded entry (i.e. that part funded by the Fund) is part of a wider project; • the extent to which Foreground IPR will be created; and • what background IPR and what Foreground IPR will be available. In answering this part, please include details of Foreground IPR, Background IPR that is necessary to use the Foreground IPR and (if appropriate) any wider background IPR that is related to the delivery of the project as a whole (i.e. not just the funded entry).	N/A
		iii.	Alternative IPR	Appears only if answer to Di. is Alternative . Please set out your alternative IPR proposals and how they meet the following conditions: <ol style="list-style-type: none"> 1. The entry will not result in restricted benefits to customers of water companies in England and Wales; 2. The alternative arrangements will not result in additional costs to customers. In setting out how your proposals meet the criteria, answers must include the following:	N/A

			<ul style="list-style-type: none"> • whether the funded entry (i.e. that part funded by the Fund) is part of a wider project; • details of Foreground IPR to be generated by the funded entry, details of Background IPR that is necessary to use the Foreground IPR for the funded entry and details of wider background IPR relating to the delivery of the project as a whole (i.e. not just the funded entry); • What IPR will be available for the funded entry under the proposed alternative IPR provisions, and the customer benefits of that availability alone. • If the wider project Background IPR will be available what would the terms be? <p>Please include an assessment, including where appropriate a cost benefit analysis, as to how these terms are proportionate given the wider benefits to customers.</p> <p>Where your proposal does not align with the default position on IPR, Ofwat has discretion to consider alternative IPR arrangements.</p>
	iv	Background IPR Trial	<p>Only appears if the answer to Di. is Trial</p> <p>For the purpose of the Trial option, the terms and conditions differentiate between 'General Background IPR' and 'Specific Background IPR'. Specific Background IPR is Background IPR which has been specifically identified in the entry and is such Background IPR that may be licenced on terms including a royalty and/or other appropriate forms of remuneration. However, we recognise that Specific Background IPR may require adjustment during the project and therefore the terms and conditions allow for the possibility of later designation, at Ofwat's discretion. General Background IPR is any and all Background IPR that is not Specific Background IPR.</p> <p>Please set out how your proposals will not result in restricted benefits to customers of water companies, and ultimately there will not be additional costs to customers.</p>

				<p>In setting out your proposals your response should include details of:</p> <ul style="list-style-type: none"> • whether the funded entry (i.e. that part funded by the Fund) is part of a wider project; • Foreground IPR to be generated by the funded entry; • Background IPR that is necessary to use the Foreground IPR for the funded entry, clearly distinguishing between General Background IPR and Specific Background IPR; and • any other background IPR relating to the delivery of the project as a whole (i.e. not the funded entry). <p>Where you are seeking to designate Background IPR as Specific Background IPR, we expect you to include as much detail as possible in your application relating to potential levels of royalties and/or other appropriate forms of remuneration that you or your partners intend to impose on the Water Companies (where these are known or can be proposed at this stage of the project), or the principles and, where possible, the mechanisms you or your partners may use to calculate these in future. In all instances you must set out how and why you consider that the proposals or the approaches outlined are fair, reasonable and non-discriminatory. We recognise that it may be more difficult to provide this information for projects that are at an early stage of development. Where this is the case, you should clearly state what information you can and cannot provide at the point of submitting your entry and why.</p> <p>In order to assess whether the proposed terms are fair, reasonable and non-discriminatory we expect you to provide information in your entry that demonstrates how the proposed royalties, remuneration and/or principles are:</p> <ul style="list-style-type: none"> • reasonable in light of market standard royalties or other remuneration; • no less favourable than the terms that you may offer to third parties; • in all cases, proportional to the funding contributed by Ofwat to the development of the relevant Foreground IPR; and 	
--	--	--	--	--	--

				<ul style="list-style-type: none"> generally, in line with the principle that the Foreground IPR (and therefore the Background IPR required to use the Foreground IPR) must be used for the benefit of the customers of all water companies and present value for money for those customers. 	
E	Confidentiality	i	Confidentiality of your entry	<p>Please list the question numbers in this entry form where you consider your responses contain confidential information.</p> <p>Where possible, we ask that you avoid including confidential information in your response to Questions Ai, Aiii, 0.1 and 0.2. If you do include confidential information in response to these questions, please clearly identify it.</p>	N/A
		ii	Details of confidentiality of your entry	Please briefly explain why you consider your answers to be confidential in line with your response to i.	N/A
F	Monitoring & Evaluation Questions	i	What is the duration (in months) of your project?		N/A
		ii	Anticipated start date	<p>Please state the date you anticipate your project beginning.</p> <p>We expect entries to the Breakthrough 2 that are awarded funding to start within 6 months of being notified of the award, but we recognise that some entries may require a longer mobilisation period.</p>	N/A
		iii	Anticipated end date	Assuming you start on your anticipated start date, please state the date you anticipate your project being complete.	N/A
		iv	Entry stage at start of project	<p>Dropdown project stages as set out in 8.1 Appendix 1 Project Stages in the Handbook.</p> <p>Please select the most relevant project stage that your entry will be at when it starts using Breakthrough 2 funding.</p>	
		v	Entry stage anticipated at project completion	<p>Dropdown project stages as set out in 8.1 Appendix 1 Project Stages in the Handbook.</p> <p>Please select the most relevant project stage that your entry be at when it is complete.</p>	N/A

Breakthrough 2 Catalyst Stream Entrant Handbook

	vi	Are you resubmitting this entry following a previous submission to an Ofwat Innovation Fund competition round?	Single option: Yes No	
	vii	Have the entry partners worked together with the lead entrant before?	Single Option: Yes, it's an existing partnership Yes, but we're partnering in a different capacity for the entry No, it's a new partnership	N/A
	viii	Please explain your answer to question vii above.		N/A

5.2.2 Assessed questions and assessment criteria

General Questions

Assessment Criteria		Assessment Guidance	Question #	Question	Question Guidance	Word Count
0	All	These questions will not be scored but will be used to aid the understanding of our judges and assessors when scoring your entry.	0.1	Entry Title	Please include a short name to reference your entry.	N/A
			0.2	Entry description	Please provide a concise summary of your entry in jargon free, plain English. This may be used in public facing communications if the entry is successful.	250

The following questions are included in the entry form, relating to assessment criteria as set out below.

1. Positive impact for water customers, society, and the environment Weighting – 33.33%

Under this assessment category, we will be looking to understand the benefits your entry seeks to deliver for customers, society, and the environment.

Strong entries will be seeking to address a well evidenced, important need or opportunity in the water sector in England and Wales for water customers, society and/or the environment [that aligns with one or more of Ofwat’s five strategic innovation themes.](#)

Assessment Criteria		Assessment Guidance	Question #	Question	Question Guidance	Word Count
1.1	Address a significant need or opportunity for customers, society and/or the environment	Strong entries will be able to articulate which significant need or opportunity the entry aims to address. Entrants should demonstrate a deep understanding of this need or opportunity in terms of its detail; how it may develop in the future; the wider context in which it exists; and, how widely it is shared. Entrants should also showcase an understanding of the wider sector and demonstrate that their initiative addresses an unmet need.	1.1.1	What is the problem that the proposed entry is seeking to address for the water sector?	Please provide a short narrative summary of the customer, society and/or environmental need this entry aims to address and why it is significant to the water sector.	250
			1.1.2	What, if anything, has already been done to understand and address this problem, either by the entry partners or others?	Please provide a summary of any work to date undertaken to address this problem by you or others, detailing the key aspects of the problem that have not yet been addressed.	250
1.2		Strong entries will be able to demonstrate how the	1.2.1	How will this entry directly deliver better short and	With particular reference to water and wastewater	250

	Align with one (or more) of Ofwat’s five strategic innovation themes	outcomes and benefits have a direct or indirect impact on one (or more) of the five Ofwat strategic innovation themes. Entries must be clear on how these benefits will be achieved with a focus on the strength of alignment with the themes (rather than indirect or less tangible impacts on numerous themes).		long-term outcomes against one (or more) of Ofwat’s five strategic innovation themes?	customers in England and Wales please provide a short narrative to set out how the outcomes, benefits and impacts of the entry proposes to directly impact and align with the Ofwat themes. We are interested in the strength of alignment rather than the number of Ofwat themes that are addressed.	
			1.2.2	Select which theme(s) your entry is impacting: Theme most impacted [List of themes 1-5 + Not Applicable] Theme 2 nd most impacted [List of themes 1-5 + Not Applicable] Theme 3 rd most impacted etc.	Please select the Ofwat theme(s) which are directly impacted through this entry.	N/A Dropdown
1.3	Will, or could, be effective in addressing these problems or opportunities	Strong entries will be able to demonstrate the extent to which and how the entry will address the need or opportunity identified. Entrants will set out how the entry delivers impact and benefits to customers, society, and / or the environment in the short and long term.	1.3.1	What are the entry’s intended outcomes?	Please provide a bullet point list of the intended outcomes (what the entry hopes to achieve/accomplish by project completion). With particular reference to positive outcomes for water and wastewater customers in England and Wales. For example, an outcome may	300

					be that, by entry completion, a new approach will be accepted and brought into operations by all entry partner organisations using a new acceptance process developed within the entry.	
			1.3.2	Provide an explanation of how this initiative will achieve the entry's intended outcomes.	Please provide an explanation of how this entry will achieve the outcomes set out above. Your description should include supporting activities, assumptions, contextual factors, and external influences.	300
			1.3.3	What longer-term impacts and benefits will the entry provide for the water sector in England and Wales, once the project has been completed?	Please provide a narrative detailing the entry's wider benefits, both direct and indirect. This should include how it advances innovation in the water sector in England and Wales and why this should be invested in the water sector in England and Wales. Please quantify benefits where possible and provide a description of the approach used. Where possible set out any potential cost efficiencies, if any, that you expect this project to achieve that would benefit water customers and when you	200

					anticipate these to materialise.	
1.4	Set out a realistic reflection of external risks and how the potential benefits to customers, society and the environment outweigh these risks.	To be truly innovative we recognise that entries may have to take on external risks. We are open to entries that take these risks provided that these entries are impactful with potential for significant benefits. A strong entry will provide an honest and realistic reflection of the risks and opportunities for customers, society and/or the environment associated with the entry. It will set out clearly how the benefits of these entries balance the possible outcomes and inherent risks involved. It will provide articulation of how much is understood about its feasibility, uncertainties and known unknowns, and the range of possible scenarios or outcomes that may be achieved through the work. It will also set out what the entry can achieve in the event that these risks materialise, such as information sharing, to work towards achieving the	1.4.1	What are the most significant external risks of your entry and how have they been considered and addressed in the development of this entry?	Please provide a short high-level narrative which sets out the wider risks and uncertainties associated with the entry, as opposed to direct entry delivery risks. We are looking for clarity on what is known and what is unknown/uncertain about achieving your outcomes; a clear understanding of key external risks; and the identification of opportunities of delivering this entry. Examples of external risks may include, for example, the risk that the solution is not taken up by the sector, long term viability, changes in longer term regulatory policy, failure to get public acceptance, risk of the solution failing to meet long term outcomes or issues around transition to business-as-usual operations. This should include the nature of any interaction with outcome delivery incentives (ODI).	500
			1.4.2	How do the benefits of this entry justify acceptance of the external risks?	Please provide a summary of why this entry is worth funding which sets out the benefits	300

		ultimate outcomes for the entry.			(quantified where possible) and balance against the potential risks (quantified where possible). We recognise that to be innovative, entries may need to take on risk, therefore we are looking for evidence that these risks are balanced by significant benefits.	
--	--	----------------------------------	--	--	---	--

2. Innovation enablers and innovative solutions Weighting – 33.33%

Under this assessment category, we will be looking to understand what is novel about the proposed approach and solution, and how it could deliver a positive sector-wide innovation legacy.

Strong entries will demonstrate how the proposed entry goes beyond the entrant’s business-as-usual approach to innovation and how it may draw inspiration and/or talent from other sectors. This is both in terms of what the entrant proposes to deliver and how they propose to deliver it. This is both in terms of what the entrant proposes to deliver (innovative solutions) and how they propose to deliver it (innovation enablers).

Innovation enablers are the innovative approaches the entry is proposing, which may include how entrants are working internally and externally with collaborators within and outside of the water sector for the benefit of water customers in England and Wales. Entries could include testing new ideas; adapting ideas or practices that have established themselves in other sectors; or adopting proven approaches that haven’t been tried at scale.

Assessment Criteria		Assessment Guidance	Question #	Question	Question Guidance	Word Count
2.1	Use innovative approaches and/or solutions which would not reasonably be expected to be funded as part of business as usual	Strong entries will clearly set out how the approach or solution within the entry is innovative in terms of how distinct it is from business as usual. This can include experimenting with new ideas, adapting ideas and practices from other sectors or adopting approaches at scale. Solutions may include better management of people and resources, systems or processes or technologies.	2.1.1	What solutions, technologies, methodologies, and/or insights are you intending to use?	Please provide a high-level summary of the solutions, technologies, methodologies, and insights proposed within this entry.	250
			2.1.2	What is innovative about your entry? How are the solutions, technologies, methodologies, and/or insights better than what has been developed and/or deployed in the past? Why would it not reasonably be expected to be funded as part of business as usual?	Please set out how innovative these solutions, technologies, methodologies, and insights are, including how proven they are. Please also provide a summary of how they are an improvement on others that have been developed and/or deployed previously. Please explain why this initiative wouldn't/couldn't be	350

					undertaken as part of a water company's business as usual.	
2.2	Develop innovative enablers which accelerates practice beyond business as usual	Strong entries will articulate how the initiative is innovative in its approach. This may include how entrants are working and sharing ideas with collaborators within and outside the water sector, new business practices and internal business operations, dissemination and use of the knowledge gained across the sector, partnerships, and effective joint working.	2.2.1	What approaches, ways of working and other enablers of innovation are you intending to use?	Please provide a high-level summary of the approaches, ways of working and other enablers which are proposed for this entry. For more detail on innovation enablers please refer to section 3.1 of the Entrant Handbook.	200
			2.2.2	What is innovative about your approach? How are the approaches and ways of working better than what has been developed and/or deployed in the past? Why isn't this approach developed as part of business-as-usual practice?	Please set out how innovative you consider your entry's approach is, including how much research, trialling or similar has been undertaken on it so far. Please provide a summary of how this approach is an improvement on others that have been developed and/or deployed previously in the water sector. Please explain why the entry's approach wouldn't/couldn't be developed as part of a water company's business as usual.	350
2.3	Set out the potential for adoption at scale across the water sector.	Strong entries will either demonstrate how their solutions and/or approaches can be applied at scale, or has the potential to be applied at scale in the future, to provide	2.3.1	Following the successful delivery of this entry, how could it be implemented at scale across the water sector in England and Wales and what steps will	Please provide a summary of how the entry can provide benefits, address water sector wide needs, and/or be used to improve operations across numerous geographies,	200

		<p>benefits across the water sector in England and Wales. Entrants with clear plans and pathways will detail how they have considered opportunities and challenges for roll out across the sector and/or how they are addressing barriers to future adoption at an early design stage.</p>		<p>you take in your entry to enable this? What challenges and/or barriers to further implementation have you identified?</p>	<p>businesses, and scenarios. Please include a summary of potential challenges or barriers to applying or implementing the outcomes of the entry at scale.</p>	
--	--	--	--	---	---	--

3. Capacity, capability, and commitment to deliver Weighting – 33.33%

Under this assessment category, we will be looking for a clear narrative demonstrating strong evidence that the proposed entry is feasible and that appropriate resources and governance will be in place for its delivery.

Assessment Criteria		Assessment Guidance	Question #	Question	Question Guidance	Word Count
3.1	Show commitment to the entry	Strong entries will be able to provide evidence of commitment to the entry, especially at a senior level. This will include the extent to which partners have committed to supporting the entry as well as any additional resources or funding partners are providing to the entry.	3.1.1	Who are the senior sponsors and leaders involved in the entry, from the lead water company and partner organisations, and how are they engaged and invested in it?	Please provide a broad narrative around the engagement and investment of senior staff. In doing so, please reflect executive commitment to continuing the entry if entry personnel were to change, as well as how senior leadership envisions the entry to impact and benefit their organisations' ambitions beyond technical improvements, for example through internal cultural change.	250
			3.1.2	Are any additional contributions, above the mandatory 10% contribution, committed to the entry from entry partners (including financial and non-financial)?	Please provide an overview of the contributions each partner will be committing to the entry beyond the mandatory 10% financial contribution. Non-financial contributions could include access to existing data, use of facilities, wider resources etc. Please reflect any contributions that can be financially quantified in Tab B	250

					of the Entry Template in addition to this narrative	
3.2	Will be delivered by a team with the relevant skills and experience	Strong entries will be able to describe the roles and responsibilities assigned to the entry participants. They will also be able to demonstrate that the team includes individuals with relevant skills/capabilities and experience to deliver the entry	3.2.1	Please provide a description of the entry delivery team. Include team structure, roles, responsibilities, skills and experience.	Please provide a short description of the key team members involved in the entry, including from partner organisations, as well as their relevant skills and experience. Please include a short description of the roles and responsibilities assigned to each of the entry partners and how this will support the success of this entry. Please also indicate which partner organisation the team member belongs to. Where roles will be filled post-award, please describe the pre-requisite skills to fulfil the role and when the role is planned to be filled. Please upload an organogram detailing the structure of the entry delivery team (JPEG, PNG or PDF).	500

3.3	Set out a realistic and achievable programme	Strong entries will be able to detail the timeline of activities the entry is proposing and demonstrate that the entry has a realistic and achievable delivery plan and programme; with appropriately timed milestones and a proportionate monitoring plan for entry progress, which includes a plan for monitoring the benefits set out within category 1 'Positive impact for water customers, society and the environment'.	3.3.1	Please set out the major milestones and activities for the entry.	Please detail the phases of delivery of your entry, with details of the activities that will happen within each phase. Set out proposed milestones at the end of each phase and how you will determine if the entry has successfully met these milestones. These milestones should be proportional to the scale and risk of your entry. Please link these to the major entry delivery stages and phases for your entry.	250
			3.3.2	What project controls will be implemented and what is the monitoring plan for the delivery of the entry and its outcomes?	Please provide a narrative describing what project controls will be implemented and how, including any steering groups and stage gates processes in place for the project. Please also set out the proposal for monitoring entry delivery progress, outputs, and outcomes.	350
3.4	Demonstrate a realistic and considered costing which provides efficient use of customer funds	Strong entries will be able to demonstrate an efficient and realistic cost estimate and breakdown, and a profile of this spend across the entry's life cycle, and what resources will be required to maintain the actions after delivery close-out. Entrants may also identify if other sources of funding or	3.4.1	What is the breakdown of the entry costs, including the assumptions made? Please attach the completed budget template for your entry.	Please complete Tabs A, B and C of the Entry Template. Download the Entry Template here .	N/A
			3.4.2	Other than that, provided by any of the entry partners, what other sources of funding or in-	If applicable, please set out any additional financial or non-financial resources required to complete the entry (outside the	300

		in-kind contributions are required to support this entry, detailing how and when this will be secured, as well as how different sources of funding will link together.		kind contributions will be needed to support this entry?	10% contribution, the funding from the Ofwat Innovation Fund and additional contributions provided by the partners). Please also explain if the funding has been confirmed or when would it be confirmed.	
3.5	Demonstrate a clear and proportionate approach to addressing risk	Strong entries will be able to demonstrate how they will continue to identify and how they will quantify the addressable risks. Entrants will set credible plans for how these risks and opportunities are to be appropriately managed or mitigated for successful entry delivery. For example, entries should demonstrate an understanding of the circumstances in which the entry may need to adapt, pivot, or even stop if new evidence suggest alternative approaches might be more beneficial.	3.5.1	What are the risks and opportunities that have been identified for the entry and how will they be managed or mitigated?	Please complete the risk register template on Tab D of the Entry Template and outline up to 15 main risks for your entry. This may include any dependencies on partnership arrangements and procurement activities for example.	

5.2.3 Assessment criteria weighting

The assessment criteria is set out in the tables above and summarised below for convenience.

1. Positive impact for water customers, society, and the environment	Weighting
1.1 Address a significant need or opportunity for customers, society and/or the environment	8.33%
1.2 Align with one (or more) of Ofwat's five strategic innovation themes	8.33%
1.3 Will, or could, be effective in addressing these problems or opportunities	8.33%
1.4 Set out a realistic reflection of external risks and how the potential benefits to customers, society and the environment outweigh these risks	8.33%
Total	33.33%

2. Innovation enablers and innovative solutions	Weighting
2.1 Use innovative approaches and/or solutions would not reasonably be expected to be funded as part of business as usual	11.1%
2.2 Develop innovation enablers which accelerate practice beyond business as usual	11.1%
2.3 Set out the potential for adoption at scale across the water sector	11.1%
Total	33.33%

3. Capacity, capability, and commitment to deliver	Weighting
3.1 Show commitment to the entry	6.66%
3.2 Will be delivered by a team with the relevant skills and experience	6.66%
3.3 Set out a realistic and achievable programme	6.66%
3.4 Demonstrate a realistic and considered costing which makes efficient use of customer funds	6.66%
3.5 Demonstrate a clear and proportionate approach to addressing risk	6.66%
Total	33.33%

5.3 Reasonable adjustments and accommodations

If there are any reasonable adjustments that would support you entering, catering for any additional needs you may have, please contact waterinnovation@nesta.org.uk.

6. Requirements for successful entries

All participants in the Catalyst Stream of Breakthrough 2 will be required to adhere to the full [terms and conditions](#) of participation. Please ensure that you and your partners have read and understood these before submitting your entry.

If your entry is selected to win, you will be required to sign a further agreement which will outline arrangements for monitoring and reporting based on your specific winning entry.

In particular, the key requirements of winners will include:

- **Use of funding:** Any funds awarded through Breakthrough 2 must only be used to fund the initiative described in your entry which must promote the objectives of Breakthrough 2 as described on the website.
- **Open data by default:** Data, information and learning generated by the winning projects will be open by default (i.e. freely available for everyone to access, use and share). The exception to this would be sensitive data, which in this context would include personal data or data with security implications.
- **10% contribution:** All entries must include a minimum of 10% financial contribution, to ensure customers do not bear all the risk of initiatives funded through Breakthrough 2 and to encourage good project management.
- **Monitoring and reporting:** We will need to monitor your progress – this may be through meetings, surveys, written reporting, or other reasonable requests for information. We will endeavour to keep this reporting proportionate to the relative size and risk of your entry.
- **Regulatory reporting:** Water companies will need to report spending against funding allowed in Ofwat's [Regulatory Accounting Guidelines tables – Table 9A](#). For regulatory reporting purposes companies will need to report costs in 2017-18 CPIH deflated prices. Lead entrants should discuss this requirement with their finance department.
- **Intellectual property rights (IPR):** You should retain all rights in and to your background IPR, including where a bid involves more than one participant. However, an appropriate form of licence should be granted to all participants in any entry, which is the subject of a bid, for the sole purpose of the entry, to enable it to go ahead. Appropriate licenses for background IPR and foreground IPR should be provided to all current and future water companies in England and Wales, which depending on the IPR route selected may allow for royalties and/or other appropriate forms of remuneration to be charged for the use of the Background IPR.

- **Publicity:** We may use the names of the organisations and summaries of their proposals in publicity materials for Breakthrough 2. We also ask that you acknowledge our support in any public statements about the entry.
- **Conflicts of interest:** You (and any partners you work with) must take reasonable steps to manage any conflicts of interest with Ofwat, Nesta or any of our delivery partners and judges. You must immediately inform Nesta if you become aware of any potential or actual conflict of interest and provide Nesta and Ofwat with all information reasonably requested in respect of such conflict.
- **Settlement Arrangement:** Payment of funds awarded through Breakthrough 2 will be settled through an agreed mechanism.

7. More information and support for your entry

If you have any questions please review the [frequently asked questions page](#). If you still have questions, please email us at waterinnovation@nesta.org.uk.

We will be hosting two online sessions:

- A webinar and Q&A session for potential entrants and partners to clarify their understanding of Breakthrough 2, hosted by the delivery partners and Ofwat. This will be held at 1.30pm (BST) Wednesday 13 October 2021, and you can register on our website, [here](#).
- A workshop providing guidance on how to develop and write a strong entry, hosted by Science Practice, the entrant support partner for Breakthrough 2. This will be held at 10.30am (BST) on Friday 22 October and you can register on our website, [here](#).

Once these events have happened, recordings and transcripts of all of our public events will be hosted on [our events page](#).

Entrants are able to get one-to-one support with their entry by applying for an entry review and coaching. This support will be provided by the entrant support partner, Science Practice, for Breakthrough 2.

We will also be running one-to-one surgery sessions for those who need support completing their entry, for example if you are in need of any clarification on the entry process or the terms and conditions for both streams. The surgery sessions will be run by the Breakthrough 2 delivery partners.

We will provide more information about these services as well as any other support available once entries open on 11 October 2021.



**Water
Breakthrough
Challenge**

waterinnovation.challenges.org

8. Appendices

Appendix 1 Project Stages

Level	Description	Typical activities to be supported in this phase of maturity	Approximate Technology Readiness Level equivalent
1 Initial research	Understanding the problem and exploring possible solutions	Initial industry & market research, Problem investigation and analysis, gathering stakeholder requirements to create the value proposition, Early optioneering of solutions, technology concept/application formulation, risk/opportunity analysis and research	TRL 1-2
2 Concept and feasibility	Developing or testing a concept, designing the solution, and testing feasibility of solutions	Innovation concept selection and early design, Testing/proving a concept, developing the initial prototype, Defining the approach to enable further detailed testing, Assessing the fundamental feasibility of solution(s) within controlled environments.	TRL 2-4
3 Development and verification	Developing the preferred solution, verifying the design through prototype demonstration in a real-world (or near real world) environment	On or off-site trials of the solution in a near-real or real-world environment, Design risk analysis, including Failure Modes Effects Analysis (FMEA) for future operation, approach to departures (how can we deploy the solution), Testing against operational requirements	TRL 3-6
4 Validation and optimisation	Scaling up the solution for roll-out or commercialisation	Identifying practical routes to market, development of training or education requirements, Large scale, or late-stage testing (pilots), Fine-tuning to proven operational concepts, Benefits evaluation, review for approval and deployment, standards, or specification development for the innovation.	TRL 6-8
5 Deployment and post-launch	Implementing or rolling out the solution and assessing its impact	Roll-out and implementation, Standard/specification finalisation and publication, User training or education, Benefits testing and evaluation, Continuous improvement & lessons learnt for future development.	TRL 8-9