

# Regulators' Pioneer Fund (RPF3) Evaluation

## Short-term project case studies

---

## RPF evaluation aims

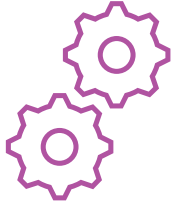
To assess RPF3's success in supporting regulators and local authorities to adopt novel and experimental regulatory approaches, which can facilitate innovation.

This includes understanding:

- Whether RPF3 has delivered against its intended goals, exploring the range of outcomes and impacts, for whom and why.
- Programme delivery lessons, with a view to disseminating these insights across government and all stakeholders.

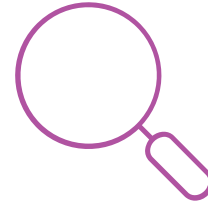


# The evaluation approach



## Methodology

- The evaluation uses Contribution Analysis (Mayne, 2011)<sup>1</sup> to understand the extent to which the outcomes achieved by the funded projects can be attributed to the RPF.
- Contribution Analysis develops a causal narrative about how and why project activities lead to change, which is presented as a series of 'contribution statements' derived from the programme Theory of Change (see slide 4).
- The contribution statements presented here were drafted at the outset of the evaluation and are due to be revised following the findings from this report.



## Evidencing

- The evaluation refines the casual narrative by testing the contribution statements against the evidence collected from interviews with project staff and beneficiaries, as well as other supporting documentation.
- Applying concepts from Process Tracing (Befani, 2020)<sup>2</sup>, these tests consider whether the observation of evidence presented is *sufficient* or *necessary* to infer outcomes:
  - “Sufficient” (i.e. conclusive evidence for the outcome that significantly increases our confidence that is outcome is true)
  - “Necessary” (i.e. a required step if the outcome is to be realised, therefore incrementally increasing confidence that the outcome is true)
- Where outcomes are projected to occur into the future, the case studies set out the extent to which these can be currently evidenced.



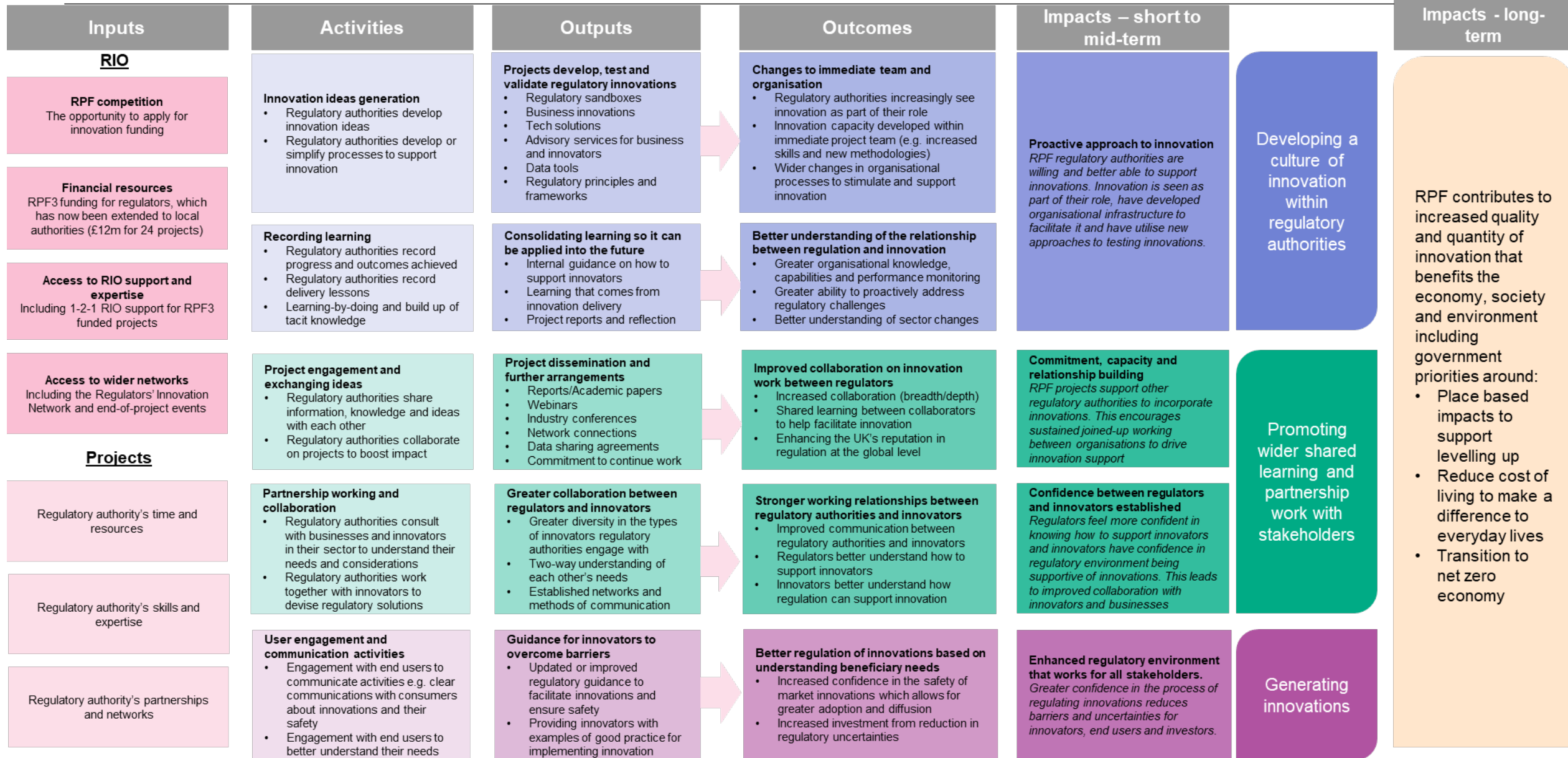
## Reporting

- The case studies presented here are published by the Technology and Innovative Regulation (TIR) Directorate, part of the Department for Science, Innovation and Technology (DSIT), the government body running the RPF programme, alongside the RPF3 interim report.
- The interim report outlines the evaluation methods and how they are applied to the RPF3 programme. The findings of the case studies are therefore structured around this evaluation framework.
- The purpose of the case studies are to help illustrate how the programme works at a project level and the outcomes achieved. They provide a 'zoomed in' perspective in comparison to the interim report, which provides insights at the programme level.

Mayne, J., 2011. Contribution analysis: Addressing cause and effect. *Evaluating the complex*, pp.53-96.

Befani, B., 2020. Quality of quality: A diagnostic approach to qualitative evaluation. *Evaluation*, 26(3), pp.333-349.

# RPF programme Theory of Change (ToC)



---

# There were six contribution statements developed from the ToC

- 1. Creating a culture of innovation.** RPF creates a culture of enabling innovation within regulatory authorities, who following the programme see innovation as part of their role.
- 2. Increased capability to enable innovation and support compliance.** RPF increases the capability of regulatory authorities to enable innovation and support compliance.
- 3a. Collaboration between regulatory authorities.** Regulatory authorities establish processes of working together and collaborating during project delivery which leads to greater capacity to tackle regulatory issues into the future.
- 3b. Influencing other regulatory authorities.** RPF projects produce innovative regulatory solutions that influence other regulatory authorities to explore new approaches to regulation.
- 4. Engagement with industry.** RPF encourages greater engagement between regulatory authorities and innovators through the project activities and the regulatory solutions they create. This allows for a better understanding of the relationship between regulation and innovation by both regulatory authorities and industry.
- 5. Creating an enabling regulatory environment.** The RPF creates an improved regulatory environment that fosters innovation and supports compliance. Regulatory authorities support innovators with the development of their ideas, increasing confidence for investors who have greater incentive to invest in the UK and reducing risks for consumers who are more likely to adopt innovations.

---

# The case studies

- Four case studies were selected to reflect the diversity of RPF projects in terms of project focus (advice provision, proof of concept development, as well as curating and disseminating good practice), project progress, sector(s) and type of regulatory authority (local authorities and national regulators). The four case study projects were delivered by the regulatory authorities listed below and summarised in the next slide.



- The case studies help illustrate how the RPF programme ToC and contribution statements work at a project level.
- For each case study, this report identifies key activities and learning across the different project phases. The learning relates to project set-up and delivery, internal and external stakeholder engagement, and whether the project enabled innovation through regulation:

Project delivery

Stakeholder engagement

Enabling innovation

- In exploring whether projects enabled innovation, the report identifies key outcome pathways for each project and the evidence that supports these.

---

# Project summaries

**Environment Agency**  
Digital simulation of Humber industrial cluster for faster deployment of decarbonisation technologies

**Health and Safety Executive**  
Delivery of regulatory sandbox for technological innovations in the construction sector

**Information Commissioner's Office (DCRF)**  
Developing and testing a multiagency advice service for digital innovators

**Wakefield Council**  
Developing an interactive tool for precautionary allergen labelling risk analysis


---

# Case study approach

- **The case studies were conducted between April and July 2024.** They involved twelve in-depth qualitative interviews in total. These were conducted with project leads and beneficiaries for each project:
  - **Project leads** – 4 x 70 to 80-minute single or paired interviews with key strategic project staff who had oversight of the project.
  - **Beneficiaries** – 8 x 30-minute single or paired interviews with key stakeholders who were either involved in the project or benefitted from it. In addition, one additional stakeholder provided documentary evidence on how they benefitted from one of the projects.
- The topics explored with participants are outlined below, with the project team using enabling materials in the interview to bring together previous project learning:

Project leads	Beneficiaries
<ul style="list-style-type: none"><li>• Revisiting project rationale and vision</li><li>• Exploring project delivery activities and issues</li><li>• Understanding project outcomes achieved and how these can lead to longer-term impacts – including evidencing these</li><li>• Factors that affected project outcomes</li></ul>	<ul style="list-style-type: none"><li>• Exploring beneficiaries' organisational context and relationship to project</li><li>• For innovators that were involved in the project, their experience of working on the project</li><li>• Project outcomes experienced for their organisation and the wider sector, and any evidence pointing to these outcomes</li></ul>

- **The research team also drew on previous end of project materials** – these included NatCen's endline interviews with project leads and the reports that projects produced to share key achievements and learning after project completion.
- **Analysis** - all interviews were transcribed, and the data was summarised using NatCen's qualitative Framework approach. This involved organising and analysing the interview data by project (and type of beneficiary) and themes (e.g. views on the stages of the project) across each project within an overall matrix. This allowed for a detailed understanding of each project, as well as comparison of insights across projects.



# Learning across the case-studies

---

# Headline learning across the case studies – motivations to apply and factors affecting project delivery

Motivations for applying	<p><b>Motivations to apply for RPF funding focused on the uniqueness of RPF funding; whether projects met wider regulatory authority goals; and wanting to reduce regulatory barriers for businesses.</b></p>	<p><b>The RPF was a unique funding source for regulators</b> – project leads said that there was no comparable source of funding which encourages regulatory bodies to experiment with regulatory innovations.</p>
		<p><b>Meeting wider regulatory authority goals</b> – regulators were motivated to apply for RPF funding where they saw their projects as contributing to the wider organisational strategic agenda and existing programmes of work to improve regulatory outcomes.</p>
		<p><b>Reducing barriers for businesses</b> – regulators were also motivated by wanting to reduce the time and costs associated with regulatory compliance for businesses in their sectors, particularly small and medium-sized enterprises (SMEs).</p>
Project delivery enablers	<p><b>A combination of factors supported project delivery. These related to the Fund (particularly its support), project practices and success in engaging key stakeholders.</b></p>	<p><b>TIR support</b> – project leads indicated that the support and guidance provided by TIR staff enabled them to identify and overcome delivery challenges quickly and effectively. In particular, projects leads pointed to the importance of regular catchups with Fund staff and the willingness of the Fund to be flexible with project deadlines in exceptional circumstances.</p>
		<p><b>Flexibility and responsiveness of project teams</b> – given the exploratory nature of the work, project leads said that the ability of their team to be flexible and adapt project delivery to changing circumstances, such as slippages in timeframes, contributed to successful delivery.</p>
		<p><b>Stakeholder and beneficiary engagement</b> – the success of many of the projects partly hinged on the involvement of a range of stakeholders and beneficiaries, such as other regulators and businesses. Projects leads therefore felt that their ability to generate awareness and interest in their project across industry and stakeholders helped to secure stakeholder engagement.</p>
Project delivery challenges	<p><b>Project delivery challenges related to time needed to set-up the project and working with contractors.</b></p>	<p><b>Needing lead-in time for set-up activities</b> – some project leads found the 4–5-week period between being awarded funding and starting delivery too short, particularly if they needed time to identify contractors, set-up contractual agreements and navigate internal governance process prior to the start of projects. However, this challenge should be seen in the wider context of governmental processes and resourcing within which the RPF operates.</p>
		<p><b>Working contractors</b> – relationships with external contractors were critical for some of the projects in delivering activities and helping to build their knowledge around specific innovations. Where relationships were challenging, project leads reported needing to align ways of working with contractors (e.g. how often they provided progress updates); having to spend more time than anticipated managing the relationship (e.g. quality assuring their outputs); and doing additional work to ensure projects could deliver (e.g. drawing on their own stakeholders for events and consultations).</p>

## Headline learning across the case studies – project outcomes

<b>Immediate outcomes achieved</b>	<p><b>All projects achieved some level of outcome for their projects.</b></p>	<p>These outcomes were aligned to RPF's key aims of encouraging regulatory authorities to adopt to novel and experimental approaches to regulation, which can facilitate innovation.</p>
		<p>In addition to meeting immediate project deliverables, project leads also reported two other outcomes, which focused on the development of:</p> <ul style="list-style-type: none"> <li>• New approaches to design and test regulatory innovations, such as sandboxes; and</li> <li>• New relationships and deepening existing ones with other regulatory authorities and innovators.</li> </ul>
<b>Taking forward regulatory innovations</b>	<p><b>Some of the projects were also seeking to develop their regulatory innovations further post-RPF funding.</b></p>	<p>Examples of further development work included expanding the scope of regulatory innovations and their reach to businesses and innovators.</p>
		<p>Project leads reported there were both financial and wider contextual factors that either enabled or hindered them from taking forward their regulatory innovations.</p> <ul style="list-style-type: none"> <li>• <b>A key financial consideration was access to future funding</b> – having access to other funding sources after RPF3 funding ended was significant in helping projects realise their longer-term outcomes. Project leads mentioned the importance of securing continued funding either from their own regulatory authority or elsewhere (e.g. from other government departments)</li> <li>• <b>Wider contextual factors included:</b> (1) the continued demand for their regulatory innovation within their regulatory authority and whether there was wider policy and public opinion concern for the regulatory gap the project was addressing; (2) the future financial position of the regulatory authority to prioritise and support the regulatory innovation; and (3) whether key stakeholders and businesses remain engaged with the regulatory innovation.</li> </ul>



# Case study 1: Digital Twin of an Industrial Cluster: A proof-of-concept on the Humber Estuary

# Project at a glance – Digital Twin

## Project context



### Regulation role

The Environment Agency (EA) are the national regulator responsible for protecting and improving the environment in England. Their responsibilities range from the regulation of waste, to protecting water quality, water resources and ecology. The EA are also responsible for managing the risk of flooding from main rivers, reservoirs, estuaries and the sea.

For the EA, the long-term goals are:

1. A nation resilient to climate change.
2. Healthy air, land and water.
3. Green growth and a sustainable future.

The priorities for the EA are to:

- work with businesses and other organisations to manage the use of resources.
- increase the resilience of people, property and businesses to the risks of flooding and coastal erosion.
- protect and improve water, land and biodiversity.
- improve the way they work as a regulator to protect people and the environment and support sustainable growth.



### Project vision

**Context:** The Digital Twin (DT) project is linked to, but separate of, a series of projects under Phase 2 of the 2021 [what was formerly] a BEIS Pathfinder Project. The Pathfinder project explored challenges to environmental capacity and water availability in industrial clusters, including the deployment of low carbon technology (e.g. carbon capture and storage (CCS)) in the Humber region.

**Rationale:** The UK has a target and policy agenda to be Net Zero by 2050. As part of this, low carbon technologies such as CCS will need to be deployed in regions of industrial clusters (concentrated areas of industry activity) to reduce carbon emissions in those areas. Given the complexity of environmental systems, it is important to understand how the implementation of low carbon technologies could cumulatively impact the environment in the surrounding area, such as water use.

**Project:** Using a Digital Twin model is one approach to understand this impact. A Digital Twin is a virtual simulation of the environment that models and visualises the water system to help anticipate the impact of implementing technologies in the area. The project aimed to establish a proof-of-concept (PoC) of a Digital Twin model to understand how it could be used to undergo regulatory evaluation of new technologies in a less costly and more data-driven way. The DT method The PoC focuses on is an industrial sub-cluster along the River Trent and River Ouse leading into the Humber Estuary.

## Project detail



### Project activities

The project journey involved identifying, collating and incorporating data from a range of sources to inform the model developed by their sub-contracted technical partner. Project activities included:

- **Data collation** – The model inputs data from the surrounding environment, climate projections, temperature thresholds and industry to simulate the area.
- **Simulating the environment** – The technical delivery partner developed the DT model of the industrial sub-cluster along the River Trent and River Ouse leading into the Humber Estuary.
- **Demonstration video** – This was created and disseminated to help illustrate the capabilities of the PoC and how it visualises the information.
- **Defining success criteria and testing** - The project defined the system needs which then informed the success criteria needed to measure the simulation outcomes.



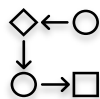
### Projects outcomes

- **Establishing a proof-of-concept** – the primary outcome of the project was that it demonstrated the capabilities for this type of regulatory tool to understand the environmental impact of implementing new technology into an area.
- **Identifying gaps in monitoring systems** – the EA found areas where further data collection would bring them richer insights.



### ...in relation to RPF

- **Innovation capacity developed within the project team** – the PoC provides a foundation for the EA's team to demonstrate how DT models can be used to inform regulation, identify environmental risk and planning issues.
- **Wider stakeholder partnerships** – the project facilitated greater engagement and partnership work with industry, technology developers such as their contractor, and Defra.



### Set-up and delivery experiences

**The project achieved what it set out to** by establishing a proof-of-concept Digital Twin model that illustrated the capabilities of the technology and what would be needed to develop it further. The project did have to refine its initial scope of modelling the whole Humber estuary industrial area, instead deciding to model the sub clusters near Keadby and Drax which were surrounded by four different industries. The cluster near Immingham was discounted due to the short timeframe of the project and the geographic scale and data limitations presented. However, the project leads felt this refined scope helped concentrate their efforts and provide greater focus.

#### Enablers to project delivery

- **Agile working and project management** practices helped the team to flex the scope when needed and ensured high quality outputs. The team used the Agile working method during their project, that includes short-sharp periods of work and reflection. When it became apparent that the project scope needed to be reduced, the project team were able to quickly adapt and refine the activities and outputs. This responsiveness helped to retain the quality of the PoC, which would not have been possible if they had persisted with the original scale of the modelling.
- **Support from TIR** provided in the monthly meetings helped the team to discuss potential barriers to project completion and receive timely support.
- **Defra's digital and data technology services team** supported the building and the hosting of the Digital Twin. Defra's team were already working on the EA's Regulatory Services Programme and use of their Regulatory Data Platform.

#### Challenges faced during project delivery

- **Short timeframe for delivery** meant that the project scope had to be reconsidered, as mentioned above. Additionally, it also meant there was not enough time to engage industry to the extent they had wanted because it took time to understand what data was needed and available before requesting industry for it.
- **Modelling challenges** were experienced by the project in several ways, including:
  - Data granularity and misalignment. Given data inputs came from numerous different sources, there was significant variation in how this data was collected. For instance, EA sample sites records covered a range of timescales and some sample sites had closed, whilst other data such as climate projections had a frequency of once or twice per annum. This led to a mis-match in how up-to-date some elements of the model were.
  - Technical capabilities also proved challenging at times. In particular, the project faced challenges integrating the multiple software tools it used for different purposes.



### Learning

**The most significant key learning from the project was understanding exactly what data was necessary** to develop a Digital Twin model for the Humber industrial region. This learning was acquired through the process of 'learning-by-doing', which involved identifying the steps and processes needed to develop the proof-of-concept during project delivery.

This learning now provides a much greater understanding of what data needs to be collected if the Digital Twin model is to be developed further or applied to another region. This includes the sources of data needed, what format this data needs to be in, what works for integrating the data and software tools together, and how environmental impact can be monitored and demonstrated to stakeholders.

#### Other key learnings include:

- The Agile method of working, particularly at the exploratory stage, was instrumental in helping the project be flexible to overcome challenges and ensuring quality.
- Engaging industry experts early on ensured that their insights were implemented in the model development process. The project has led to a clear understanding of how and when industry can feed into this process, facilitating their engagement and therefore model accuracy.
- Areas for improved environmental monitoring have been identified. This includes data that is missing entirely or understanding the scale or frequency that is needed. For example, the EA now know where it would be beneficial to install a water temperature sensor so that real-time information could be collected and fed into the model.



## Internal stakeholders

- **Environment Agency – the EA’s Future Regulation team**
- **Department for Environment, Food & Rural Affairs (Defra) – Government department.**



## Nature of engagement

Internal engagement for the project involved working with different EA teams throughout the project delivery and insight dissemination activities.

- **The EA’s Future Regulation team** were engaged throughout the project, as part of their remit is to innovate how the EA conduct their regulatory role. Following completion of the project, project leads met with the EA’s Future Regulations team to discuss project findings and recommendations, before exploring what would be needed to develop the model further. These discussions are currently ongoing.
- **Defra –** Defra were involved throughout the project lifecycle as they were the policy leads and the project sat within Defra’s wider array of other projects on the implementation of low-carbon technologies in industrial clusters. The project leads presented the project findings at a Defra Innovation event alongside their sub-contractor, with the event attended by those across the Defra group. In addition, project leads will continue to engage and share insights from the project with selected Defra colleagues, such as those focused on environmental monitoring, about the findings of the project.
- In the meantime, the EA Future Regulation team has introduced project leads to the Defra Innovation Team to help with project dissemination and sharing learning.

*We spoke to the future regulation team about [the project] throughout. They were involved, shared the findings and looked at what the next steps might be... they are really interested in it but, again, I think it's just [a question of] what are the [other] priorities? (Project lead reflecting on interest from future regulation team)*

*[The] future regulation have put the Defra innovation team in touch with me for these events... they definitely saw the interest there, because the digital twin comes up in a lot of meetings that future regulation go to, so they do tell people about it quite a lot. (Project lead reflecting on connections made with Defra innovation team)*



## Learning

Project findings have been disseminated through the EA, using webinars and teaching sessions.

Due to a project rescope, there were budget savings which enabled the project to produce a two-minute video illustrating the Digital Twin model. This output was successful in conveying how the model turns data and visualises it into a 3D image. Project leads said this was helpful for bringing the project to life, with the hope of capturing interest when sharing the learning to stakeholders.

This was an unanticipated positive outcome of the project and was possible due to the flexible nature of project delivery methods.



### External stakeholders

- **External Contractor** – Technical Delivery Partner.

- **Department for Energy Security and Net Zero (DESNZ)** – Government department.



### Nature of engagement

#### Contractors

A technical delivery partner was contracted for the project, tasked with creating the technical solution for the Digital Twin model. The contractor are a global Microsoft digital consultancy business whose work specialises in Microsoft cloud technology platforms. Before the Digital Twin project, they had signed a call-off contract with Defra and the Environment Agency.

#### External stakeholders

**DESNZ** – DESNZ were engaged in a light-touch way during project delivery but have become more prominent as the project looks to be taken forward. Engagement with DESNZ included webinar teaching sessions about the project activities and outputs. Project leads also spoke with the chief scientist at DESNZ, with interest from senior members of the departments beginning to rise. The department are currently reflecting on the project insights and recommendations.

The project cuts across multiple government agendas, including Defra who are interested in environmental impact and DESNZ whose interest is in reducing carbon emissions. The project team have therefore engaged both departments as part of the learning and dissemination process.



### Learning

- Following the publication of the project report on the EA webpage, the project leads have now reached out to specific stakeholders to share project insights. These include stakeholders from across government, regulators and industry.
- The project was able to begin delivery quickly because their technical delivery partner had an existing call-off contract with EA. This meant work could start quickly, as data sharing agreements and procedures were set up ahead of time.
- Having the two-minute video (see previous slide) to demonstrate the insights and visualisations of the Digital Twin model helped disseminate learnings in a more accessible way. This is anticipated to create a more engaged stakeholder audience.



### Immediate positive outcomes after project completion

**The project team successfully met its objective in developing a proof-of-concept for the Digital Twin model.** The model can be used to monitor the impact of carbon capture & storage technologies on water quality within the Humber industrial cluster region. The model was able to simulate concept scenarios of the impact on the water environment, subject to different carbon capture and projected climate scenarios. By allowing the user to adjust different metrics and repeatedly configure different simulations, a favourable scenario can be calibrated where industry could implement the necessary technology whilst ensuring environmental protection. Simulation results can be visualised graphically and via a 3D video, showing impacts over time in an intuitive way.

**Future work on Digital Twin Modelling will benefit from the insights provided by the project on understanding the data requirements needed.** At this stage, this PoC digital twin cannot be used to make regulatory decisions or used by the industry to design projects. Although the project's achievements were not realised at the original scale the project intended, they still achieved to the desired level of quality and have informed how regulation could evolve given sufficient resources and data. This was due to the complexity of the modelling and lack of time to get sufficient data inputs to produce the simulation. Project leads report a positive response from their engagement work, with there being reports of interest and demand for Digital Twin models to be developed further.



### Beneficiaries of the project



**Environment Agency** – understand new methodologies that can be used, the availability of data and format needed for a DT model to be viable.



**Technical partner**– project generated learning around providing technical solutions for DT modelling and provided an opportunity for them to collaborate with government on innovative work.

*We [set out] some questions at the start of the project and then we ran these scenarios to answer them... people [are] also thinking about whether the technology is useful, and how it could be used in the future. I think that shows the success of the project. (Project lead reflecting on what the proof-of-concept achieved)*

# Specific beneficiary feedback



## Technical partner

The technical delivery partner for the project was tasked with creating the technical solution for the Digital Twin model. The partner are a global Microsoft digital consultancy business whose work specialises around Microsoft cloud technology platforms.

A representative from the delivery partner found working on the project interesting and worthwhile, with it being a new way of working with government bodies. The work was said to feel much more in the innovation space than what would be typically done with government. The delivery partner felt like they worked well with the EA on the project, particularly on matters of clear communication and joined-up working.

The delivery partner supported the EA with implementing the Agile working methods throughout the project. This included introducing the EA to how the Scrum management framework (a popular management method) works and how to conduct management activities in this way – for example, how to work on task ‘sprints’ and give updates without going into granular detail (‘stand-ups’).

*It's just there's so much to do in government in terms of digital delivery that's not necessarily innovative. It's great to get an opportunity to do this type of innovation work where you're starting to push the boundaries of what's possible and starting to shape the future vision of what might be achievable over the next several years. So, that work's always fascinating for us to be involved in. (Representative from the technical delivery partner)*



## Environment Agency Future Regulation (EAFR) team

The EAFR team are responsible for the organisation's understanding of the external regulatory context and developing new approaches to how they regulate. Following the conclusion of the project, the EAFR will help assess whether to further develop the DT model.

For the EAFR team, the Digital Twin project has helped highlight the need for the Environment Agency to modernise the way they use data and show what best practice in data-driven decision making looks like. The EA possess considerable data from across their operations but are continuing to develop how they can utilise this into informing their policies. The DT proof-of-concept helps bring together all the different elements that are needed to do this – for instance, implementing real-time sensors in rivers to detect water temperature or how they use digital platforms to visualise the information.

Regarding achieving the project's intended outcomes, the EA Future Regulations team representative echoed the points made by the project team: if the proof-of-concept is to be taken forward then more investment is needed to develop the model. It was suggested that for those advocating for the DT model to be developed, it was important to highlight use cases so that the benefits of implementing this regulatory tool can be demonstrated.

*We need to make sure that the information we're collecting [...] feeds that understanding of what's happening in the environment. We need to feed that [information into the Digital Twin], particularly if we're making big decisions around where investment goes. We use this to make sure we're explaining adequately what's going to happen to the local community and area. (Representative from the EA's Future Regulation team)*



### Longer term outcomes

The Digital Twins project provides a **strong example of how the RPF programme acts as ‘seed funding’** that helps regulatory authorities develop their regulatory solutions. The RPF has funded a concept and made it into a real-life working example. This project has proven that the Digital Twin model is feasible, innovative and has the potential to utilise the large quantities of data the EA acquire in a highly informative way.

**In terms of next steps, the project team suggest that if the Digital Twin model is to progress it will need to be taken forward by government, industry or other stakeholders.** As a proof-of-concept project, it will need resources to be further developed so that it can simulate the environmental system more accurately. The project has succeeded in identifying what data is needed and how it would feed into the model, but further development is needed for this tool to be operationalised. As of the time of speaking with project leads, it is not yet clear where this resourcing may come from.

**Evidence: Too early to observe project outcome**

**In the medium term, if the Digital Twin model is taken forward it has the potential to provide the foundation to demonstrate how DT models can be used to inform regulation, identify environmental risk and planning issues.**

If the data gaps and areas for improvement that were identified through the project are addressed, a fully functioning DT model could be implemented in the Humber region (and elsewhere) to simulate implementation of low carbon technologies on the natural environment. Although the PoC looked at the impact on water quality, data could be integrated into the model to account for other environmental factors such as air quality.

**Evidence: Too early to observe project outcome**

**In the long term, the team anticipate the use of DT models will facilitate the deployment of low carbon technologies that account for environmental capacity.** In doing so, this would lead to greater investment and technology use in these areas, increasing productivity and economic value whilst reducing carbon emissions of industrial activity.

**Evidence: Too early to observe project outcome**



### Outcome enablers and barriers

The project team identified potential internal and external factors that could affect whether the Digital Twin (DT) model achieves the intended outcomes in the future:

#### Enablers

- **Governance** - the project remit sits within two departments (Defra & DESNZ) and thus has the opportunity to be continued by either one. Funding from either department is important if the model is to be developed further, though other potential sources are available too.
- **Technological**- the strength of the DT model is that it has a clear purpose of how it can be used to inform regulatory policy. The technology also aligns with the Environment Agency's focus on using more data driven methods of regulation.
- **Replicability** - project leads mentioned that the model could serve as a foundational template for a DT to be developed for other sectors, opening up the potential for funding to come from different organisations.

#### Barriers

- **Governance** – given the DT models further development is contingent on future funding, this is subject to the strategic priorities of the organisations who could be involved. These priorities are outside of the project teams' control and may require additional cooperation from academia or business if there was to be a joint agreement.
- **Technological** – the challenge for taking this forward from a technological standpoint is the current lack of data to implement a fully functional model. More sensors and data collection would be needed for this to happen and the EA would need to improve their internal models to replicate the water environment for the DT model.



## The project outcomes in relation to the RPF contribution statements

### Statement 2: Increased capability to enable innovation

**Input:** the RPF programme has given the funding to resource the development of the Digital Twin model where it would not have been available otherwise. Receiving the grant funding has also given legitimacy to the project and EA staff resourcing to be dedicated to it.

**Process:** the project team have needed to identify what data is needed to produce a Digital Twin model and technology needed to turn it into a working simulation of the Humber industrial area. This includes but is not limited to (i) understanding the frequency that data inputs are needed and available for such a model; (ii) the scale of data necessary to feed into the model to produce a working solution; and (iii) how to integrate multiple software tools to draw the information together and create the simulation. Broader management lessons have been learnt through experiencing how agile management working has allowed for a more flexible approach to project delivery to ensure high quality outputs.

**Outcomes:** the EA as an organisation have increased their knowledge base by understanding what is needed to develop a Digital Twin model in order to simulate the environmental impact of implementing low-carbon technologies in the Humber industrial area. As a result of their learnings around the required data, the EA now have a greater understanding of how and when to engage with industry to collaborate on the model and what sort of environmental monitoring systems they may wish to implement to support their activities.

### Statement 5: Creating an enabling regulatory environment

**Input:** the RPF programme has given the funding to resource the development of the Digital Twin model where it would not have been available otherwise. Receiving the grant funding has also enabled the Environment Agency to reflect on how it can provide innovative data-driven solutions to modern regulatory issues.

**Process:** the Digital Twin project has allowed the EA to understand what the data and technological requirements are for a model to be able to simulate the impact of implementing low-carbon technologies in the Humber region on water quality and availability.

**Outcome:** a proof-of-concept has been established for an innovative regulatory tool that can be used to provide data-driven decision making. This tool, if developed further, can be used to virtually test whether new low-carbon technology can meet regulatory requirements without the need to physically build it in the first place. This reduces the risk and associated costs for firms and investors to implement this technology, thus enabling the deployment of these technologies into the industrial regions.



# Digital Regulation Cooperation Forum



## Case study 2: Piloting a multi-agency advice service for digital innovators

# Project at a glance – Piloting a multi-agency advice service (MAAS)



## Regulation role

The Digital Regulation Co-operation Forum (DRCF) is a collaboration between four regulators: the Information Commissioners Office (ICO), Ofcom, the Competition and Markets Authority (CMA) and the Financial Conduct Authority (FCA). The forum promotes greater co-operation, collaboration and coherence between these regulators of digital markets and online platforms.

DRCF's key aim is to help make the UK the most innovation-friendly jurisdiction in the world by making it easier for firms that operate across digital regulatory boundaries to do business. DRCF's 2022/23 workplan sets out its commitment to undertake exploratory research into how it can make it easier for innovators to introduce new ideas across multiple regulators' boundaries.

## Project context



## Project vision

**Context:** The UK digital sector contributed nearly £151bn to the economy in 2019. Regulation of the digital sector is changing, as the pace of innovations continues to accelerate, and new technologies come into market. This has ushered in new legislation considerations around a range of areas, including online safety, data protection, financial services, cyber security and competition in digital markets.

**Rationale:** Navigating these different regulatory changes can be challenging for businesses trying to introduce new products and processes. At the time of the project, joined-up advice across several regulatory boundaries was not available to businesses developing new products and services in the digital economy. Offering a joined-up advice service has the potential to reduce regulatory burdens and complexity for businesses, making it easier to introduce new ideas across multiple regulators' boundaries.

**Project:** In response to this need, the RPF3 funded the DRCF project to explore whether and how to introduce a multi-agency advice service (MAAS) for digital innovators working across regulatory boundaries to complement the services offered by the individual regulators. This involved designing and testing the idea of a MAAS, including:

- Designing a feasible service delivery approach; and
- Testing the design of the service to see whether it was relevant in addressing potential innovators' queries.

## Project detail



## Project activities

The project selected the MAAS option after an iterative process of identifying and thinking through several solutions to provide innovators with cross-regulatory support. This iterative process and the development of the MAAS drew on an external service design consultant and involved:

- **Phase 1: Initial market research** – interviews with innovators across the four regulators' boundaries to explore the regulatory advice needs. Following on from this, the external consultant identified potential activities that DRCF could deliver to support innovators, with three activities shortlisted for phase 2: the provision of (1) centralised self-serve information; (2) networking opportunities; and (3) greater collaboration opportunities between innovators and regulators.
- **Phase 2: Service design** – the external consultant helped the project think through the shortlisted solutions further by: (1) conducting one-to-one design sessions with several businesses to explore their needs and potential support solutions in detail; and (2) a workshop with DRCF members to discuss ideas that could be taken forward in the next phase of the project. The options taken forward for consideration in the next phase were a cross-regulatory digital support hub and a case study archive of key queries that the support hub helped to address.
- **Phase 3: prototype testing** – the external consultant worked with the DRCF project group in developing a high-level design of the two shortlisted service options, including exploring how advice requests from innovators could be triaged.



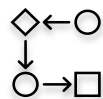
## Projects outcomes

- **The project validated the need for a cross-regulatory advice service** for innovators who work across two or more regulatory boundaries.
- **It also identified two important ways of supporting innovators:** a cross-regulatory digital support hub and a case study archive to disseminate this learning more widely.



## ...in relation to RPF

- **Developing a culture of innovation** – the project helped regulators understand their role in supporting innovations and how they could do this. This was particularly the case for regulators new to working with innovators.
- **Promoting partnerships with other regulators** – helped to further strengthen working relationships between the four regulators.
- **Helping businesses to innovate** – the project helped to provide a blueprint for an advice service that could meet innovators' needs.



### Set-up and delivery experiences

**The project delivered against its objective of understanding whether there was need for a MAAS and what this service could look like.** However, the short lead-in time before the project started meant start-up activities, such as procuring a consultant, had to be carried out within the overall fixed project length. This led to less time being spent on the delivering the core project activities.

#### Enablers to project delivery

- **The 8-month delivery period was a project enabler.** Having a fixed timeframe helped to focus the efforts and resources of the four regulators into delivering the project. However, the project team would have liked a longer lead-in time prior to the start of the project for reasons discussed below.
- **Partnership work among the four regulators through the DRCF** was key to the success of the project. All four regulators were committed to and provided the necessary resources for the successful completion of the project. This collaboration was facilitated by effective decision-making and governance processes (see discussion on internal stakeholders to follow).

#### Challenges faced during project delivery

- **Needing a longer lead-in time.** More lead-in time between the RPF funding being awarded and the start of the project would have allowed the project to tender for contractors and to plan project spend better. This issue was compounded by funding being awarded near the Christmas holiday period, leading to delays in starting the tendering process until the new year.
- **There were also differences in working practices between the project team and the contractor.** The contractor needed more support from the project team than anticipated around several issues. This included ensuring project deliverables were met and delivered to time, as well as to the required quality to be shared with senior DRCF staff.
- **Difficulties sourcing innovative firms to take part in the project.** This meant that some innovative firms were asked to contribute at more than one phase of the project, which could have potentially led to participation fatigue. The project revised the timetable and changed some project activities to mitigate this.



### Learning

**The project team suggests that the RPF build in lead-in time for projects to organise their financial spend and to facilitate the procurement process.** The lead-in time could also have helped the project reach out to wider set of contractors with deeper connections to industry. The project provided a broad estimate of having a three-month lead-in period.

**Other key learnings** related to how well the four regulators worked together and the governance and decision-making processes that facilitated this (see discussion on internal stakeholders to follow).

*[A lack of lead-in time] actually meant...that the project itself was compressed, and that some of the things that we wanted to do couldn't be done, because we couldn't get the consultants on board quickly enough...I don't think the full amount of time in which we had to deliver everything, including the procurement, was realistic. (Project lead reflecting on needing a longer lead-in time)*



### Internal stakeholders

- **The four DRCF regulators – ICO, CMA, Ofcom and FCA.**

*I would just say the commitment of the four regulators [was important to the project success]... to provide the staff, and also...all four directors were really engaged, really keen that what came out of this then led into something that would then go on. (Project lead on the importance of the four regulators working together)*



### Nature of engagement

The key internal stakeholders were the four regulators driving the project, under the umbrella of the DRCF. A key challenge was that the regulators were working across different regulatory boundaries and differed in their knowledge and experience of supporting innovations, approaches to supporting businesses and strategic priorities.



### Learning

**The project demonstrated that four different regulators could work together to effectively deliver a project to support innovation.** This is because they already had a working relationship through the DRCF, and all four regulators were committed to the successful completion of the project. A key part of this was having a strong commitment to the project from the directors of each regulator, which ensured challenges could be addressed quickly and that resources and staff time were available to the project.

**Further, the project helped the DRCF to develop clear governance and decision-making processes that could also be scaled-up for future partnership work.** This involved the setup of a Project Group with representatives from each regulator answerable to the DRCF Board and the dedicated project management team, consisting of the project lead, a Comms lead and a project manager. This governance structure facilitated the set-up of clear project delivery roles, helped achieve consensus on the direction of the project from all four regulators and coordinated regulator communication with the contractor.





### External stakeholders

- **External contractor** – Service Design Expertise.

- **Businesses** – Large businesses and SMEs.



### Nature of engagement

#### Contractors

The DRCF bought in service design expertise from an external contractor, after a competitive tendering process. The contractor was selected because of their knowledge and experience in supporting service design and relationships with businesses in key sectors.

#### External stakeholders

As noted, businesses were involved throughout the three phases of the project, from understanding innovators needs in phase 1 to testing potential shortlisted solutions in phase 3.



### Learning

**The external contractor were an important partner in helping to design and test the MAAS.** They delivered to time and helped to engage businesses in the service design process. However, the project team experienced some challenges working with an external contractor; these included:

- The differences in working practices between the project team and the contractor.
- Accessing a wide range of businesses for the service design sessions, partly because the contractor did not have access to businesses in specific sectors. The DRCF partially addressed this by drawing on the four regulators' own business connections.

**For future learning**, the project team felt that the consultant procurement process will need to build in more requirements for consultants to demonstrate evidence of industry connections.



### Immediate positive outcomes after project completion

**The project was successful in establishing foundations for the service by establishing the need for the MASS and providing insights into what this service could look like.** This included:

- Identifying a cross-regulatory digital support hub and a case study archive as important ways in which innovators could be supported.
- Understanding what the technical requirements design of these services could look like.

**A final report was published which outlined the research insights, along with recommendations for the future progression of the service.** However, although the project provided an understanding of the technical requirements of developing an advice service across regulatory boundaries, it did not provide insights into the practical considerations of developing a service that works across different regulator organisation boundaries.

*I think the question originally [was] should we provide cross-regulatory innovation guidance and support, and I think, broadly speaking, we've demonstrated [that]... (Project lead reflecting positively on project outcomes)*



### Beneficiaries of the project



**The four regulators are the key beneficiaries at this early stage** – they have a better understanding of the need of innovators working across regulatory boundaries and how best they can support them. The relationship between regulators has also been strengthened.



**Businesses innovating across regulatory boundaries** – who had an opportunity to contribute to the design of the service and will eventually benefit from the advice service.

---

# Specific beneficiary feedback



Ofcom regulates the communications services used by consumers and businesses. In meeting this statutory duty, Ofcom is also required to encourage investment and innovation in relevant markets to promote economic growth. Ofcom therefore has an interest in promoting innovation in the sectors it regulates, as this has the potential to lead to better outcomes for consumers and supports healthy competition and investment.

Given this interest in innovation, Ofcom was one of the four DRCF regulators involved on the MAAS project. Reflecting on what they gained from the project, Ofcom felt that they now had a better understanding of what innovators require from regulators and how collaboration with the other DRCF partners could support innovations. This speaks directly to two keys RPF aims: encouraging regulatory bodies to work together to drive innovation and helping them have a better understanding of what innovators need to develop products and services. Ofcom also reported other learning from the project, including:

- Improved understanding of the regulatory innovation programmes in the UK and international digital regulatory landscape.
- Improved understanding of international models for regulators providing advice and support to innovators.



### Longer term outcomes

The MAAS project is a good example of an RPF project that brings together regulators that work across different sectors, and within different regulatory remits. The project ultimately aims to make the UK innovation-friendly by helping businesses operate across digital regulatory boundaries.

**In terms of next steps, the project has already secured funding from the Department for Science, Innovation and Technology (DSIT) to conduct a full-service pilot of a type of MAAS that focuses on AI, as well as wider digital products and services.** At the time of writing, the pilot had just started, with businesses starting to submit queries.

**Evidence: Sufficient evidence observed for outcome**

**In the medium term, the project team will assess the pilot to understand the level and nature of demand for the service.** The project team will assess the queries submitted by businesses to understand whether the service can meet these needs and how well processes, such as the triaging of queries, are working. The project would also like to publish selective responses to queries as case studies that other businesses can access, in order to disseminate learning around cross-regulatory innovation more widely.

**Evidence: Too early to observe project outcome**

**In the long term, the team are hoping that there is a high demand for the service and that it can address the types of queries that businesses raise.** This may lead to continued support from the four regulators to deliver the service, subject to funding being available to do this. Should the service continue, the project team anticipate that it will benefit businesses by providing advice across more than one regulatory boundary, so saving them time and potentially costs involved in searching for information from different regulators. Further, any case studies developed and published on regulator websites could benefit a larger number of businesses that have not directly used the advice service. The project team also think that regulators would benefit from the service by gaining insight into how businesses think about and approach innovation from the queries the service responds to.

**Evidence: Too early to observe project outcome**

*...the next stage of the work is [is about understanding], '...who is actually going to use it [the pilot service]?' How many firms are going to use it? Who is going to benefit from it'.  
(Project lead reflecting positively on the next steps for the MAAS)*



### Outcome enablers and barriers

The project team identified both internal and wider factors that have and could potentially affect intended outcomes.

- **Policy landscape and funding.** The project received funding from DSIT to help with the continuation of the piloting. This funding was received for two reasons: firstly, the RPF provided the project with publicity which has attracted this additional funding. Secondly, the project is dovetailing its work to the recent review by Patrick Vallance<sup>1</sup> around the economic value of regulation supporting new technologies, such as AI.
- **Business take-up of the service.** The MAAS will need a sufficient level of business take-up for DRCF to consider to continue it after the pilot, subject to funding availability. Accordingly, the service will need to demonstrate sufficient business demand and, further, that the queries businesses submit are relevant to the service. The project team will monitor the demand of the service during the pilot.

**The service also depends on the four regulators working closely together.** As noted, the regulators are keen to do this as a result of their experience of collaborating on the RPF project.

1. Vallance, P. et al., 2023. Pro-innovation regulation of technologies review: Digital technologies. HM Government



## The project outcomes in relation to the RPF contribution statements

### Statement 3a: Collaboration between regulatory authorities.

**Input:** The RPF funding provided an opportunity for the four regulators to work together on a project to understand whether the MAAS was needed and what it should look like.

**Process:** The project enabled the four regulators to work towards a common objective, better understand each-others' priorities and remits, whilst forging new working relationships.

**Outcome:** All four regulators have continued to work together to pilot the MAAS, demonstrating a lasting and continued commitment to support innovators. The further development of the MAAS ensures the regulators continue to engage in each other's work.

### Statement 4: Engagement with industry


**Input:** The RPF fund provided an opportunity for the four regulators to work closely with industry innovators to understand their needs and what regulatory gaps exist.

**Process:** This interaction between regulators and innovators deepened an understanding of each other's needs and activities, which informed the MAAS design.

**Outcome:** The DRCF's piloting of the MAAS demonstrates the regulators' continued commitment to understand how best to support innovators working across regulatory boundaries.



Health and Safety Executive

The background of the slide is a high-angle photograph of a construction site. Two workers are visible in the foreground. One worker, wearing a blue hard hat and a high-visibility yellow vest, is leaning over a workbench, possibly using a power tool. The other worker, wearing a white hard hat and a high-visibility orange and green jacket, stands nearby. The site is filled with various construction materials, including wooden planks, metal beams, and rebar structures. The scene is brightly lit, suggesting a sunny day.

**Case study 3: Creating the first Industrial Safetytech Regulatory Sandbox for the UK Construction sector**

# Project at a glance – Industrial Safetytech Regulatory Sandbox (ISRS)

## Project context



### Regulation role

The Health and Safety Executive (HSE) is the government agency responsible for the Great Britain's national workplace health and safety regulation.

HSE was established by the Health and Safety Work Act 1974 and helps to prevent work-related death, injury and ill-health through legislation and regulated Health and Safety procedures in the workplace.

HSE has several key responsibilities:

- Promoting safer working environments.
- Researching better Health and Safety compliance.
- Developing policies, strategies and procedures for Health and Safety
- Ensuring compliance with all Health and Safety laws Providing advice, guidance or information.
- Operating licencing activities in industries that may have major hazards associated with them.
- Raising awareness in workplaces of Health and Safety through influence and engagement.



### Project vision

**Context:** Industrial Safetytech (IS) is the collective term for innovative technologies, products and services used to support health and safety risk management and regulation within workplace settings.

**Rationale:** Workers in the construction sector face a diverse range of health and safety risks. These include risks associated with working at height, manual handling, working with heavy machinery, and activities exposing workers to hazards such as noise, vibration and dust. The HSE Strategy, Protecting people and places (2022-2032), recognises in its objectives that there is a need to enable industry to innovate and that government, regulators and innovators should work more collegiately.

**Project:** The aim of the Industrial Safety Regulatory Sandbox (ISRS) project was to explore the opportunities for using IS to improve health and safety performance and compliance in construction, as well as to understand barriers to adoption of these new technologies. The project expands on their Discovering Safety Programme, a wider programme designed to improve health and safety using data and new analytical techniques. The project aimed to use a regulatory sandbox approach (a safe space in which businesses can test without incurring the normal regulatory consequences) to develop recommendations on how technology can accelerate safety in the workplace. A total of 26 industry stakeholders contributed to the consultation of priority risk areas for the sandbox. Six investigative studies ('case studies') were identified and run through the sandbox process; each was led by a technology company and supported by mentors from HSE and industry experts.

## Project detail



### Project activities

The HSE project team delivered the project in partnership with their delivery partner, a not-for-profit organisation specialising in safety and risk in industrial sectors. The project involved identifying six case studies to run through the Sandbox process; each case study was led by a tech company and assessed different health and safety technologies. Project activities included:

- **Defining challenge areas** - initial scoping and definition of health and safety regulatory challenge areas by HSE.
- **Sandbox design and implementation** – review of other sandboxing approaches and identification of best practice and lessons learnt.
- **Running the sandbox** - running the sandbox investigative studies including engagement, mentoring and reviewing progress.
- **Recommendations and dissemination** – wider industry consultation, and planning and delivery of the final dissemination event.



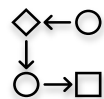
### Projects outcomes

- **Demonstrated HSE's capability to use a regulatory sandbox approach** – who intend to use this approach to develop and assess future innovations.
- **Demonstrated HSEs credential as an enabling regulator to key stakeholders** – the project helped to position HSE as a regulator supportive of technological innovation in industry among key stakeholders, including industry and academia.
- **Tech companies are now thinking about regulatory compliance upstream** – prompted industry to think about compliance to H&S regulation earlier in the development process of industrial Safetytech products used in construction.



### ...in relation to RPF

- **Developing a culture of innovation within regulatory authorities** - HSE has developed a new sandbox methodology which they can use to explore new H&S technologies.
- **Promoting partnership work with innovators and businesses** - continued relationship with their project delivery partner and increased collaboration and interest within the tech industry.



### Set-up and delivery experiences

**The project team successfully designed the sandbox approach and recruited six tech companies to conduct the investigative case studies.** Five of the case studies were successfully completed, with one of these progressing to develop a tangible health and safety product. However, one of the six case studies was not completed due to the tech company having to pull out, possibly because of changes in their internal organisational priorities. Each investigative study produced a report, which will be reviewed and then published separately to promote and disseminate their work and provide recommendations for industry.

#### Enablers to project success

- **Marketing** – Marketing enabled the effective recruitment of tech companies. The project team used platforms, such as LinkedIn, to effectively recruit and onboard tech companies.
- **RPF support** – the RPF support helped the project navigate delivery challenges in the following ways:
  - The RPF team were flexible in helping to align the RPF's financial requirements with the project's internal financial processes.
  - The monthly RPF catch-ups helped to keep the project on track. The catch-ups provided a regular check-up on the project's financial situation and supported the project team to reflect on the project's activities, goals, and progress.
- **Policy landscape and relevance** – the topicality of using AI in the workplace stimulated industry interest and engagement with the project.

#### Challenges faced during project delivery

- **Project leads felt that delivering their project in the 8-month period was challenging.** Although the project team felt the timeframe for short-term projects was longer than in previous rounds of the RPF fund, it still led to set-up and delivery challenges. These included:
  - The sandbox process required more time and resources than first anticipated - the project team found it difficult to decide the risk areas, gain industry participation and then source out the tech companies in the time provided.
  - The tech companies sometimes found delivering to the time schedules challenging, as they were delivering their project in addition to other core work.
- **Limited regulatory expertise in the construction sector.** The immediate project team had limited expertise in this sector but were able to secure internal input from colleagues across several divisions of their organisation. However, it took time and effort to get buy-in to the project internally and access the resources and support they needed.



### Learning

- **Early selection and engagement of industry experts and other stakeholders.** This engagement was important to the success of the project, so the team felt that the project benefited from the considerable time and effort they spent in engaging and recruiting key stakeholders at the start. These stakeholders included industry experts and smaller organisations, such as trade bodies and/or representatives.
- **Bringing project stakeholders together.** The project benefited from meetings where all the key stakeholders were present, including tech companies, mentors and contractors. These meetings provided an opportunity for stakeholders to openly learn from one another and to network. The team felt that in-person meetings worked particularly well for discussions around larger project deliverables and felt that more in-person networking opportunities and events would have been beneficial.

#### Key learning for the ISRS project included:

- **The project team felt that they needed a longer lead-in time for set-up and recruitment activities.** This would have enabled the team to engage tech companies and provided more time between case study selection and the first project deliverable.



### External stakeholders

- **Delivery partner:** Not-for-profit organisation specialised in health and safety in industrial sectors

- **Tech businesses:** Eave, Flyd, HAL Robotics, Machine Eye, PLINX, Oculo.

- **Construction clients:** HS2, Heathrow Airport, Manchester Airport Group, Birmingham Airport.

- **Industry experts:** Costain, BAM Nuttall, Laing O'Rourke, Multiplex, Morgan Sindall, Ferrovial, Amey, Colas, Skanska, FM Conway, Kier, John Sisk, Sir Robert McApline, Balfour Beatty.



### Nature of engagement

#### Delivery partner

**Delivery partner** – HSE worked with their delivery partner to help organise the tech companies and then run the sandbox. HSE already had an established relationship with their delivery partner, co-delivering three accelerators with them prior to the project.

#### External stakeholders

**Tech businesses** - 6 tech companies, from an initial field of over 200, were chosen against the Sandbox selection criteria. An overview of each of the companies' tech expertise is listed below:

- **Eave:** The EAVE system comprises smart ear defenders which continuously collect data on environmental noise and the wearer's exposure to noise linked to their movements around workplaces. The system helps prevent excessive levels of noise exposure by identifying those workers at higher risk and capturing intelligence about how their exposures can be prevented at source or reduced through changes to working practice.
- **Flyd:** FYLD is a digital platform that automatically transforms video and audio footage captured by a frontline worker about to start a work task, into a real-time workflow and risk assessment.
- **HAL Robotics:** HAL Robotics is an extensible and modular software which facilitates inter-device communication, adaptive programming of robot tasks, and motion planning for one or many robots working together.
- **Machine Eye:** Machine Eye employs deep learning AI techniques to identify humans in real-time and understand their likely interaction with vehicles, heavy plant or machinery, to assist, inform and support decision-making linked to how works can be carried out safely at people-plant interfaces.
- **PLINX:** PLINX is a safety system using wireless sensor technology designed to make construction sites safer; the system protects construction workers by restricting access based on role and purpose to areas of hazardous activity.
- **Oculo:** Oculo apply elements of SLAM (Simultaneous Localisation and Mapping) and photogrammetry to create an automated process that documents a worksite and creates a 3D model that can facilitate collaboration.



### Learning

- **Established relationship with their delivery partner** – HSE's previous experience of working with their delivery partner had several advantages for the project. The continued relationship meant that the project team already knew and had a working relationship with staff members. As a result, the project team knew that they would be dependable and prioritise their project. It also meant that they were able to support HSE at the application stage, given that they had already been informed about the project.
- **HSEs existing industry engagement and contacts with industry experts benefited the project** – in two ways:
  - It helped them source the tech companies for the case studies. HSE's reputation and Discovering Safety programme meant that tech companies were aware and interested in what they were doing.
  - It helped them draw on industry experts as mentors for the case studies.



### Immediate positive outcomes after project completion

As mentioned previously, 5 of the 6 case studies were successfully completed. The sandbox approach facilitated the following:

- Acceleration of the development of new safety technology, for example for FYLD, EAVE, Machine Eye and PLINX.
- Open discussion and exploration of safety solutions between industry and tech companies.
- Encouraged a new way for industry and other stakeholders to work with HSE to collaboratively explore innovation options, barriers and opportunities.

The project's achievement went beyond its initial scope, with one of the case studies going on to develop their product beyond the testing and sandbox stage. The tech company went on to doing trials and then altered their product because of the construction industry.

Key to the success of their project was HSE being seen as an enabling regulator, a regulator which supports innovation, by industry and other stakeholders. This was evidenced by stakeholders' response to HSE's first Industrial Safetytech Regulatory Sandbox event. The event shared learning from the sandbox projects, as well as outlining the project's six innovation solutions and the next steps. All of the 97 attendees, including delegates from government, health and safety professionals and technology and academia, reported at the event that they considered HSE to be an enabling regulator.

**Evidence: Project leads have confirmed this, and evidence was provided to show the necessary steps were met for this outcome to be realised.**

The project also raised tech companies' awareness of how technology can contribute to safety at the pre-construction stage. At the start of the project, businesses had the view that technologies were useful when work had already started, and when risks are being managed on a day-to-day basis. There is now evidence from the case study dissemination reports that tech companies are pushing the idea for technology to influence the design of projects in the pre-construction and planning stage. The consensus is that it is better to eliminate risks before work starts in the health and safety sector.



### Beneficiaries of the project



**BAM** –mentor and contractor for two of the case studies. They benefitted from established connections with HSE and innovators. One of the products is being implemented at one of their sites because of the project.



**Heathrow airport** – construction client for HAL robotics and PLINX



**Tech companies (e.g. FYLD)** – who were able to test their different technologies and services using the sandbox approach. They are now closer to implementing these innovations in the future.

*I think one of the main key positives that came out of it was we got a lot of feedback that it was quite a surprise to find HSE acting in this way and being really open to developing that culture with industry and tech. So, that was really positive and that's been taken back into the organisation. So, you'll see in our strategy something about being an enabling regulator." (Project lead reflecting on being an enabling regulator)*

# Specific beneficiary feedback



## BAM: Mentor for tech companies

BAM Nuttall was the contractor and mentor for two of the case studies, HAL Robotics and PLINX. They provided early feedback and input into the sandbox, including the problem identification exercise and innovator selection process. Since the project has ended, they have been invited to the HSE laboratory where they were able to gain additional insights from trialling safetytech. They were also able to develop relationships with industry groups outside of their two case studies and will benefit from these ongoing relationships.

*Yes, I think the networking aspect of it was really important. Some of the businesses I've stayed in touch with a little bit, so even some of the ones that I didn't mentor, in particular around human form interface on machine for zonal working. There's some industry groups that I've been invited to and tried to stay in touch with some of the guys that develop some of that technology. (Representative at BAM Nuttall)*



## FYLD: Tech company

FYLD is a company responsible for a digital platform that transforms video and audio footage into real-time workflows, visual risk assessments and analytics dashboards. FLYD wanted to understand how they can drive the adoption of AI technologies across the construction industry to improve safety outcomes. The RPF project allowed FYLD to discuss their programme directly with HSE representatives. Presenting at the HSE's conference also exposed them to a range of key stakeholders and potential future buyers of their platform. They enjoyed working with HSE and their contractor, Colas. Colas is now implementing their technology across other contracts.

*I think it was the Health and Safety Executive's support and leadership in this programme that was really first class, and we really enjoyed working with them. We got the outcomes that we needed, and interestingly, Colas as an organisation now have deployed FYLD on other solutions, so that's the real proof in the pudding, right. You're not just doing a research programme, but also, as a result of the outcomes of that proof of concept, the reality is they've now taken it on and spread it across other contracts that they have. (Representative at FYLD)*



## Heathrow Airport: Construction client for tech companies

Heathrow airport was the construction client and mentor for two of the case studies, HAL Robotics and PLINX. They had regular meetings with these companies to provide advice and thinking about optimising the design of their sites. The Heathrow mentors shared their learning and insights with the Heathrow board which stimulated thinking about health and safety and innovation within Heathrow. They are now thinking of implementing some of these technologies within the airport. Since the project has ended, they have now been involved in the second sandbox project being run by HSE and their technical partner.

*The great thing about it is, I took to the board at Heathrow\* safe... Well, the Heathrow Airport\* board, so this is the CEO of Heathrow\* and all the people, the shareholders and stuff, and told them what we were doing in this space with the delivery partner. Even the board are really excited about the possibilities, let's just say, so even the board are aware now of what I am doing in that space, so once you get the Heathrow\* board, crikey, that is a big thing, right? That is a massive thing. (Representative at Heathrow Airport)*



### Longer term outcomes

**The ultimate aim of the project was to** create new ways of working to develop effective health and safety risk prevention techniques. The project intended to provide confidence for businesses to invest in innovative health and safety technologies and the deployment of IS. The project has helped HSE understand more about innovative technologies, including what technology already exists and how they should be engaging with it.

**In the short term, the project team are encouraging the use of the sandboxing approach more widely within HSE.** They have now received another funding opportunity to further develop their sandboxing approach from the Knowledge Asset Grant Fund run by the Government Office of Technology Transfer (GOTT) with their delivery partner. Their new project is broader and focuses on smarter regulation. It aims to understand what they need to do to enable industry to innovate and improve health and safety performance and compliance. It will also involve more regulators.

**Evidence: Indicated by project lead**

**In the medium term, HSE will continue to have discussions about construction safety.** Since completing the project, HSE has received funding from Innovate UK to form a network for regulatory innovation in safety tech. This will enable them to continue having discussions with tech companies and innovators. In addition to this, they have been invited to a House of Lords discussion and are having follow up conversations with DSIT. They have also been approached by various tech organisations and have also generated interest from different airports. They will continue their partnership with their delivery partner who have already been involved in follow-up work.

**Evidence: Indicated by project lead**

**In the long term, HSE aim to internally fund the sandboxing approach to continue doing innovative work for the construction sector.** So far, they have been asked to present at internal events throughout the year to the rest of the organisation. Their chief scientific advisor has also been interested in their work suggesting a shift in attitudes within HSE. The project leads suggested that more people from the organisation are starting to see the benefits of the work.

**Evidence: Too early to observe project outcome**



### Outcome enablers and barriers

The project team identified both internal and wider factors that could affect whether they achieve the intended medium-term and long-term outcomes:

**Internal engagement** – wider HSE staff may see this work as a distraction to their core work, which could be a barrier to it being internally funded.

**SME engagement** - there are two reasons why it may be challenging to gain SME engagement:

- SMEs do not have much time to invest and think about the future.
- SME's may not engage with HSE as they do not see their role in supporting innovations. They may define HSE's role as one of 'inspecting' practice rather than enabling innovation. Although this may change given that they strive to be an enabling regulator.

*We had clients like HS2 and ...Crossrail and Thames Lower Crossing are interested. So, it's snowballing and we're now working with all those different organisations ... They've seen that big infrastructure clients are getting involved with us and they want to also be part of it. So, we've got separate projects... big infrastructure programmes going on in the UK. (Project lead reflecting positively on the connections and partnerships made from the project)*



## The project outcomes in relation to the RPF contribution statements

### Statement 1: Creating a culture of innovation

**Input:** The RPF has provided financial resources to identify challenge areas in health and safety and develop innovative solutions in an experimental way, where typical funding models do not allow for this type of risk.

**Process:** By validating the sandboxing process through the RPF project, HSE now have greater skills and confidence in understanding how to utilise these new methods to test whether innovations meet regulatory requirements.

**Outcome:** HSE now has an increased commitment to applying a sandbox approach to solving regulatory matters, with the aim of increasing safety and are looking to apply the new method in other areas of compliance beyond construction. In doing so, this demonstrates that HSE are developing a greater culture of innovative practices in their operations.

### Statement 4: Engagement with industry

**Input:** The RPF fund created an environment where HSE and innovative tech companies can work together towards a common objective.

**Process:** The project has increased the level of exposure between HSE and innovators in a more collaborative and balanced setting than previous interactions. This way of working helped innovators and HSE to have more extensive and openness in their communication, enabling greater two-way understanding of each other's needs and remit. This allowed for consideration of requests earlier on in the innovation development process and to provide more timely and targeted support to innovators.

**Outcome:** There is greater understanding between HSE and the innovator case studies on what is needed to achieve product development. HSE now have a greater understanding of how to support innovators during this process, whilst the innovators now know where they can find regulatory requirements earlier in development. There is increased confidence and trust in each other's ability to account for their respective priorities, resulting in the development of more effective innovations.



## **Case study 4: Supporting Small and Medium Size enterprises (SMEs) to navigate 'Precautionary Allergen Labelling Risk Analysis'**

# Project at a glance – AllergyPAL



## Regulation role

The Environmental Health team at Wakefield Council strives to promote a high standard of public and environmental health within the local Council area.

As part of the Council's Community & Development Services department, the Environmental Health team's key roles are to fulfil the Council's responsibilities as required by various Acts and Regulations which deal with:

- Public and environmental health.
- Food Safety and hygiene.
- Environmental protection and pollution prevention.

The team's role in food safety and hygiene involves a wide range of activities in the administration of the Food Safety Act 1990 and The Food Safety and Hygiene (England) Regulations 2013 . The main categories in the food surveillance areas are:

- Food premises inspection.
- Enforcement of food legislation
- Starting a food business and notification advice.
- Food education courses.
- Food complaints investigations.
- Temporary catering advice.

## Project context



## Project vision

**Context:** Precautionary Allergen Labelling (PAL) informs consumers of the unintentional cross-contamination of one of the 14 allergens widely known to contribute to allergies or intolerances.

**Rationale:** According to recent research by the Food and Standards Agency (FSA), Small and Medium-sized enterprises (SME) in the retail and hospitality sector are increasingly using PAL to inform consumers of potential allergen risks. However, SMEs tend to have a lower understanding and confidence in applying PAL, leading to applying labelling without correctly assessing their ability to control and manage allergen cross-contact. This undermines the value of PAL and exposes businesses to consumer allergen near misses and subsequent regulatory and civil or criminal action.

**Project:** In response, the project developed AllergyPal – a digital, online tool designed to allow SMEs to learn about PAL in a simplified and engaging way. The tool provides a one-stop shop for delivering guidance to a large number of SMEs as efficiently as possible; it:

- Provides PAL related questions and information across five business models – including coffee shops, restaurants, sandwich shops, farm shops and take-aways.
- Within each business model, there are up to 10 real life hypothetical questions with supporting Point of View (PoV) visuals, providing examples of effective allergen risk management.

## Project detail



## Project activities

The project journey involved identifying the key business models relevant for AllergyPal, the technical questions appropriate for each model, as well as developing and testing the digital tool. The activities included:

- **Initial desktop research** – to understand how other sectors had delivered regulatory guidance in an accessible way to SMEs and to source potential digital service providers.
- **Focus groups with key stakeholders** – to review and refine the technical questions for AllergyPal. Two focus groups were conducted in total, with 28 participants from key stakeholder organisations – including SMEs, FSA and Allergy Aware.
- **Refinement** – further consultation with FSA and Allergy Aware to refine the technical questions.
- **Developing and testing the digital tool** – translating the technical specification into the interactive AllergyPal digital tool.



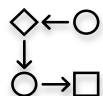
## Projects outcomes

- **AllergyPal digital tool launched** – with FSA happy to endorse it.
- **SMEs have started using the tool** – Google Analytics indicated up to 40 SMEs are accessing the tool a month.
- **Wider use of the tool** – large businesses have also begun signposting the tool to the SMEs in their supply chain.



## ...in relation to RPF

- **Promoting partnership with other regulators to drive innovation** – continued relationship with FSA and Allergy Aware in the development of the AllergyPal tool. FSA has also endorsed and promoted the tool on their website.
- **Enhanced regulatory environment that works for all stakeholders**- initial qualitative evidence suggests that the online tool has helped: (1) larger firms working with SMEs feel confident that their supply chain has a better understanding of allergen risks and (2) helped SMEs to access a free, comprehensive and easy to use resource to help them feel more confident about allergy labelling.



### Set-up and delivery experiences

The project team were successful in designing and launching the AllergyPal online digital tool in 8-months. The tool provides an immersive allergy learning experience for SMEs across five business models –coffee shops, restaurants, sandwich shops, farm shops and take-aways.

#### Enablers to project delivery

- **The project was able to engage national stakeholders to inform the development of AllergyPal and increase its reach.** This included the FSA and industry experts (discussed in the stakeholder section).
- **The project team worked agilely to identify and respond to emerging issues.** For example, the team had to re-think the design of AllergyPal as they became more familiar with the design process (discussed below). They were also able to tweak working arrangements with the contractor to meet project needs (discussed in the stakeholder section).
- **The monthly RPF catch-up also helped to keep the project on track.** The project team found these regular catch-ups with TIR staff helpful in sharing and troubleshooting emerging project issues.

#### Challenges faced during to project delivery

- **Needing a longer lead-in time.** There was a slight delay in the start of the project as the project team had to navigate Wakefield Council's internal governance requirements associated with accepting external funding. This was compounded by the RPF funding being awarded just before the Christmas period, making it challenging for the project team to contact internal signatories to sign-off the RPF funding conditions.
- **Delivering the project in 8-months was a challenge because some of the project activities could have benefited from more time for iteration.** This included designing the technical questions, which the project team felt could have been refined through further consultation with businesses after the focus group stage. However, the project team also noted that there were advantages to having a short delivery period, such as helping the project team retain delivery focus and reducing the likelihood of staff turnover in that period.
- **Aligning understanding of AllergyPal specification with the contractor.** The project team had a limited knowledge of creating a digital tool like AllergyPal and, conversely, the design contractor had a limited understanding of the food and hygiene context. This led to the initial design issues outlined below.
  - The project team was unable to translate early design ideas into practice. For example, they could not add a 'drag and drop' digital element to AllergyPal, allowing users to digitally move kitchen equipment through PoV style kitchens, because they had underestimated how long it would take to do this.
  - The project team did not have a clear understanding on how some of the design stages would take.
  - The visuals and audio drafted by the contractor for some of the scenarios lacked specificity and so took more time to develop. For example, essential kitchen infrastructure, such as a wash sink, was omitted from one of the scenarios.

The project team resolved this by creating a design specification spreadsheet. This spreadsheet provided the contractor with clarity around the type of visuals that the project team wanted for each of the business models and allowed the project team to review the contractor's design against these.



### Learning

- **The project team suggested the RPF build in a longer lead-in for projects.** This would have given the project more time to navigate their internal governance process.
- **The team also felt they could have better forecasted labour costs for the last month of the project.** In particular, the team had overlooked the resources needed to test AllergyPal prior to launch. In the future, the project teams would ask contractors for a detailed breakdown of resources for all stages of activity at the tendering stage.

*...the benefit for us in that eight months [is] that we've been able to keep all of those various stakeholders really well-engaged. I think the longer the project, things [happen] and you sometimes get people whose attention drifts away because - life takes over. (Project lead reflecting on benefit of a shorter time period)*

*We had to work quite quickly, then, to come up with I suppose a Plan B almost, to deliver that with the same objective, which was to have an element of gamification and the visuals to support the learning, which we did really well. (Project lead reflecting on need to be agile when the 'drag and drop' feature could not be implemented)*



### Internal stakeholders

- **The wider Environmental Health team and Trading standards.**



### Nature of engagement

**Other staff from Wakefield's Environmental Health Team and their Trading Standards Team also contributed to the development of AllergyPal.** Both teams were involved in the focus group discussions to refine the technical questions for the five business models. In addition, other staff from the Environmental Health Team were also consulted when the team were selecting the five business models for AllergyPal. The team drew on staff experience of providing businesses advice to help prioritise the key models.



### Learning

**The project benefited from involving a wider range of internal stakeholders.** They were able to bring together expertise outside of the immediate project team to help shape AllergyPal.



## External stakeholders

- **Contractor**- Creative design contractor

- **National regulators** - Food Standards Agency (FSA)

- **Industry experts** – Food Allergy Aware

- **Businesses** – Large businesses and SMEs



## Nature of engagement

### Contractors

**Wakefield did not have in-house expertise to design and develop digital tools and so had to contract in a design firm to do this.** Several local contractors were identified through a third-party networking organisation for businesses that create and design industry-led digital products. The eventual contractor was selected after a competitive tendering process.

### External stakeholders

From the outset, the project acknowledged the importance of working with a range of external stakeholders to both strengthen AllergyPal's design and extend its reach to businesses. These included:

- **The Food Standards Agency (FSA)** – the project team saw them as a key partner for four reasons. Firstly, the project team did not want to duplicate any existing work that the FSA had done. Secondly, they wanted to draw on the FSA's expertise to help inform AllergyPal's technical questions. Thirdly, they felt that AllergyPal could benefit from having FSA guidance documentation, such as around Safer Food, integrated into its design. Fourthly, the project team felt that AllergyPal's reach to businesses would benefit from being endorsed by a regulator that is trusted by businesses.
- **Food Allergy Aware** - were seen to be an important project partner because of their extensive knowledge of food allergies and their high regard within the food industry. As with the FSA, they were a sounding board throughout the project's life, including in the focus groups.
- **Businesses**- to bring in the user perspective to inform the tool, particularly in the focus groups. The project reached out to SMEs and also large businesses, who had experience of working with SMEs in their supply chain.



## Learning

- **The project had a clear vision of the national partnerships required to contribute to the success of AllergyPal.** The team involved experts to help develop AllergyPal and to extend its reach nationally.
- **The project had a good working relationship with the contractor, who delivered to time and specification.** However, there were some early challenges which included aligning:
  - The technical expertise of the project team and the contractor, as noted earlier. The project team did this through creating a spreadsheet to provide a detailed specification of how AllergyPal should look like both from a creative and a food and hygiene perspective.
  - Working practices between the contractor and the project team. For example, the project team would have wanted more regular updates on progress than they initially received. In response, the team refined their Service Level Agreement with the contractor to clarify working expectations.



### Immediate positive outcomes after project completion

**As noted, the project team successfully met its objective in launching the online interactive digital training tool.** The tool provides interactive training for five business models, including: coffee shops, restaurants, sandwich shops, farm shops and take-aways.

Key to the success of the tool is its ability to reach a large number of SMEs. Initial Google Analytics indicates that over forty SMEs (over a 1000 hits, with people spending an average of 4 mins on the website) have used the tool every month. However, the project team have not been able to monitor AllergyPal usage more systematically due to GDPR regulations, as well concerns around creating a potential barrier for businesses who may not want their use of the tool to be monitored. The project team therefore have ambitions to gather more detailed usage information through, for example, developing a comprehensive survey tool and focus groups with SMEs.

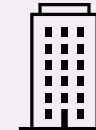
**The project's reach to businesses went beyond its original scope in two ways.** Firstly, AllergyPal was of interest to large businesses, as well as SMEs. The project team found that large businesses were either signposting the tool to the SMEs in their supply chain to upskill them on PAL or were using it to train their casual workforce. Secondly, the FSA and Allergy Aware endorsed the tool, further extending its reach to businesses. The FSA gave permission for the project team to integrate key existing FSA resources into the tool, such as their Precautionary Allergen Labelling Guidance, which allowed the project team to cite their endorsement of the tool in press releases and signpost the tool on their website.



### Beneficiaries of the project

wakefieldcouncil

**Wakefield Council** – the council has benefited by being able to deliver guidance and training to SMEs in their area in a cost-effective way.



**SMEs**– can now access free to use, clear and dynamic training relevant for their food business model.



**Large businesses**– who are able to integrate the tool as part of their quality assurance and training procedures in a cost-effective way.

# Specific beneficiary feedback



## Large food retailer

The beneficiary is a large national food retailer. Although they operate nationally, they have a Primary Authority relationship with Wakefield Council who supports them with environmental health regulations.

The retailer heard about AllergyPal through their contact at Wakefield Council. They were interested in the tool because they have SMEs in their supply chain and are interested in supporting them meet to meet allergy regulations. They feel that smaller businesses often lack authoritative information about allergy labelling and so have signposted some of the SMEs to the tool.

In addition to benefitting SMEs, they also felt AllergyPal would benefit them and other large retailers by reducing the administrative burden of dealing with SME's allergy labelling queries and making the products they sell safer for consumers. They therefore signposted AllergyPal to other large businesses in a consortium they attended.

*We've told them [SMEs in their supply chain] that it's [AllergyPal] available. It's not [our] tool; it's a government tool, so that sometimes lands in a different way, shall we say?! But it's [about] giving small suppliers as much information [as possible]. They're the ones that struggle [with PAL information]. (Representative from large food retailer)*



## ASM Global

ASM Global is a large, multinational food and beverage company that operates outlets in a range of national events and venues. It has its European head offices in Manchester and so works closely with Wakefield Council, who is their Primary Authority responsible for supporting them to meet environmental health regulations for their work in theatres and arenas.

The company therefore has a close working relationship with Wakefield Council so had the opportunity to advise on the development of the AllergyPal tool. They advised on developing the catering business model and helped to provide a final review of the tool. They enjoyed working with the project team as they felt valued and listened to.

ASM Global works with casual and agency staff to deliver its services, particularly students who work over the summer period. It is vital for the company to cost-effectively induct their casual workforce so that they are aware of allergens. They use AllergyPal to do this, either by sending a link to the tool for casual staff to self-complete before their first day at work, or as a group activity during a training day. The company has found the tool to be invaluable as it is free, provides authoritative information and is engaging and time-effective to complete, particularly when done in a group.

*With Allergy Pal, it's free. It's a great induction tool and it's very beneficial for our company to be able to use that.. [It can be time-effective because] I suppose we can do it all together as a group... You can just box that off in such a quick session...So it's proficiency and time, because that's what we need in the catering industry. Chefs are busy. Managers are busy. (Representative from ASM Global )*



### Longer term outcomes

**Ultimately, AllergyPal is designed to provide SMEs with a resource to unlock regulatory barriers.** It will do so by providing a self-directed way of learning about how to navigate PAL to help businesses enter and remain open for business in the food and hospitality sector. AllergyPal will also support SMEs to provide a safe environment for their customers, thereby protecting the wider public. The project team outlined three steps needed to accomplish its long-term goal, presented below alongside the evidence to support this.

**In terms of the next steps, the project team anticipate being able to continue to develop the tool further.** The project team have ambitions of extending the resources available in AllergyPal and to position it as a hub or one-stop-shop, which provides extensive food hygiene learning materials tailored to SMEs. To inform this development process, the project team are looking into gathering information from SMEs and other users to understanding whether AllergyPal is useful and if any improvements are needed.

**Evidence: Sufficient evidence has been observed.**

**In the medium term, the project hopes to strengthen the credibility of AllergyPal and extend its reach by continuing to work with large regulators and businesses.** The aim is for larger regulators, such as the FSA, to help promote and develop the tool, and for large businesses to influence their SME supply chain to use the tool.

**Evidence: Evidence that is necessary for this outcome to occur has been observed**

**In the longer term, the project team feel that the tool can help stimulate dialogue among regulators and businesses around the use of PAL in the hospitality sector.** The project team also hopes that the dialogue with the FSA around the tool will help influence the FSA to continue developing existing PAL standards and improve the way it is regulated.

**Evidence: Too early to observe project outcome**



### Outcome enablers and barriers

The project team mentioned both organisational and wider factors that could affect AllergyPal achieving its intended short and long-term outcomes:

- **Organisational changes.** AllergyPal's future development is dependent on the local authority continuing to support staff to work on the project. This may be adversely affected if the local authority needs to reprioritise its work due to financial downturns in the future.
- **Legislative changes.** The project team felt that allergy awareness is currently topical both in the media and in legislation due to several high-profile public allergy incident cases. The continued high-profile of allergy awareness could lead to the use of tools such as AllergyPal being a mandatory requirement for SMEs. However, the project team also noted that any significant changes in allergy legislation could potentially lead to AllergyPal having to be revised, which will have a cost implication for the project.
- **Continued working relationship with the FSA.** The project team acknowledge that they will need to continue to work with FSA to further develop the tool as they do not have significant internal funding to do this.



## The project outcomes in relation to the RPF contribution statements

### Statement 3a: Collaboration between regulatory authorities

**Input:** The RPF funding provided financial resources, which helped to secure organisational support for Wakefield Council's development of AllergyPal. The TIR also supported the project throughout the funding period.

**Process:** The high public profile of RPF funding and the project's focus on meeting a regulatory provision gap for SMEs contributed to collaborations with key partners. This included a key national regulator (FSA), industry experts (particularly Allergy Aware) and large businesses that work with SMEs.

**Outcome:** Wakefield Council continues to collaborate closely with the FSA to implement the AllergyPAL tool, exploring where regulatory compliance can be supported for businesses.

### Statement 5: Creating an enabling regulatory environment

**Input:** The RPF funding provided financial resources, which helped to secure organisational support for Wakefield Council's development of AllergyPal. The TIR also supported the project throughout the funding period.

**Process:** The project's focus on meeting a regulatory provision gap for SMEs attracted the attention of large businesses. These large businesses extended AllergyPal's reach by: (1) signposting other large businesses to the tool; (2) encouraging SMEs in their supply chain to use tool; (3) using it as a tool to train casual staff they work with in the hospitality sector.

**Outcome:** AllergyPal has made regulatory compliance accessible to SMEs, reducing both barriers to entry to the hospitality and food sector and SMEs having to close due to regulatory non-compliance. By improving SMEs understanding of PAL, the tool also protects consumers with allergy conditions.