

EVALUATION OF UK SHORE PHASE 1 EXECUTIVE SUMMARY

Combining findings from the interim and final
evaluation UK SHORE phase 1

03 AUGUST 2026

Department for Transport

Great Minster House

33 Horseferry Road

London

SW1P 4DR



© King's Printer and Controller of HMSO 2026

This publication is licensed under the terms of the Open Government Licence v3.0 except where otherwise stated. To view this licence, visit www.nationalarchives.gov.uk/doc/opengovernment-licence/version/3/ or contact,

The National Archives at www.nationalarchives.gov.uk/contact-us.

Where we have identified any third-party copyright information you will need to obtain permission from the copyright holders concerned.

This publication is also available on our website at www.gov.uk/government/organisations/department-for-transport

Any enquiries regarding this publication should be sent to us at www.gov.uk/government/organisations/department-for-transport

Contents

Key findings for policy makers	4
There is evidence that UK SHORE is delivering early impacts	4
It is highly likely that the benefits of UK SHORE will deliver value for money	5
The iterative approach to scheme design was beneficial, but timelines for project delivery have been challenging	5
Introduction	7
The UK SHORE portfolio	7
Aims of UK SHORE and approach of this evaluation	8
Data used for this evaluation and its limitations	11
Findings from the process evaluation	11
The competition phase	12
The mobilisation phase	12
The delivery phase	13
Findings from the impact evaluation	13
Portfolio-wide findings	14
Findings from the scheme-level impact evaluation	18
Findings from the value for money (VfM) evaluation	20
Strategic fit	20
Economic and effective delivery	20
Comparison of costs and benefits	21

Key findings for policy makers

The Department for Transport (DfT) launched the UK Shipping Office for Reducing Emissions (UK SHORE) programme in March 2022. Total funding was £206 million between April 2022 and March 2025, building on the £23 million allocated to the Clean Maritime Demonstration Competition Round 1 (CMDC1) in 2021. UK SHORE is a portfolio of schemes. It aims to address maritime emissions and support skilled jobs across the country by accelerating the research into, and development of, clean maritime technologies.

The UK SHORE portfolio consists of several schemes that support technologies at different technology readiness levels (TRLs) – a measurement system used to assess the maturity of a particular technology during research and development. Four schemes which formed part of UK SHORE phase 1 are in scope for this evaluation: Clean Maritime Decarbonisation Competition scheme rounds 1 to 4 (CMDC 1-4), the Zero Emission Vessel and Infrastructure scheme round 1 (ZEV), Transport Research Innovation Grant scheme rounds 2021 to 2024 (TRIG), and the Clean Maritime Research Hub (The Hub). These schemes total £220 million in funding. Additional schemes included in the phase 1 UK SHORE portfolio (Smart Shipping Acceleration Fund, CMDC5 and CMDC6) are not within scope of this evaluation.

This report presents findings from the evaluation of UK SHORE phase 1. This comprised process, impact and value for money evaluations conducted over two stages from December 2023 to summer 2025 (data collection completed in June 2025). As the schemes in scope of the evaluation have only recently concluded or are still being delivered, this represents an early evaluation of UK SHORE before longer-term impacts have been fully realised.

There is evidence that UK SHORE is delivering early impacts

- UK SHORE has supported technologies across a range of TRLs and has helped to create a **pipeline of projects**. Twenty-nine per cent of organisations funded by UK SHORE have been funded more than once.
- However, the **portfolio effect** could be strengthened. This includes through impactful portfolio-wide knowledge sharing and adjusted scheme timings to allow projects to more easily develop technologies from lower to higher TRLs across multiple schemes.
- The **funding has been successful at developing technology**. This impact has also **largely been additional**. Around 60% of survey respondents reported that their project would not have gone ahead without UK SHORE funding, and no respondent said that their technology would have developed in the same way.
- **Significant emissions savings are not yet expected to have materialised** due to the early stage nature of this evaluation. However, one CMDC4 project reported that savings had already been achieved by replacing the diesel power generator with shore power at

a shipyard (43,362 tonnes of carbon dioxide equivalent (tCO₂e) per year). Many projects reported the potential for emissions savings to be generated in future.

- By June 2025, **1,086 UK jobs had been created or retained as a result of the two main schemes** (CMDC rounds 1 to 4 and ZEVI round 1) based on self-reported data. This figure is expected to rise to **9,565 jobs in the next five years**. These figures likely underestimate total job creation due to high levels of data non-responses. On the other hand, they may also include optimism bias and may be displaced jobs as opposed to being fully additional.
- **Private investment has been crowded in as a result of UK SHORE.** As of December 2023, total industry match funding (industry co-investment alongside the public investment) was £120 million across the portfolio. This was in line with business case expectations. In addition, around a quarter of responding organisations generated additional public or private funding totalling £30 million during the delivery phase. Therefore, omitting UK SHORE funded public investment, a total of **£150 million worth of additional investment has been generated**. Further additional investment can be expected in the future.

It is highly likely that the benefits of UK SHORE will deliver value for money

- It is **highly likely that UK SHORE will represent value for money** in the sense that the value of the benefits will exceed the public costs of delivery.
- Estimated early and non-comprehensive benefit-cost ratios (BCRs) on the two main sources of benefits, job creation and emissions savings suggest that benefits exceed UK SHORE costs, even when looking at each benefit independently. When combined together and set alongside wider non-monetised benefits, it is highly likely that the overall BCR for UK SHORE will be well above 1.
- Evidence also suggests that UK SHORE is demonstrating **strategic fit** with key government objectives including the [Maritime Decarbonisation Strategy](#) (DfT, 2025), the Kickstarting Economic Growth mission and the UK's [Modern Industrial Strategy](#) (UK Government, 2025) goal to increase private investment.

The iterative approach to scheme design was beneficial, but timelines for project delivery have been challenging

- UK SHORE stakeholders and delivery partners have taken an **iterative approach to scheme design**. Learnings from previous schemes have been used to improve future schemes and scheme rounds. This, along with the **high quality of collaboration and communication** between stakeholders and delivery partners, are key strengths of the UK SHORE programme.

- **Some of the projects were delivered later than planned** due to procurement and supplier difficulties, regulatory barriers and technological problems. Project teams perceived project delivery timescales to be challenging, particularly for ZEVI.
- **Challenges navigating regulation were prevalent across schemes funded by UK SHORE.** Organisations and delivery partners noted unexpected regulatory issues and lengthy processes resulting in delays and unforeseen costs to projects.

Executive summary

Introduction

The Department for Transport (DfT) launched the UK Shipping Office for Reducing Emissions (UK SHORE) programme in March 2022, with total public funding of £206 million between April 2022 and March 2025.¹ UK SHORE is a portfolio of schemes. It aims to address maritime emissions and support skilled jobs across the country by accelerating the research into, and development of, clean maritime technologies. UK SHORE built on the £23 million allocated to the Clean Maritime Demonstration Competition Round 1 (CMD1) in 2021.

DfT commissioned Frontier Economics and SYSTRA Ltd. to design and lead the evaluation of the first phase of UK SHORE. This comprised process, impact and value for money (VfM) evaluations of the UK SHORE portfolio and its individual schemes launched before October 2023.

This Executive Summary summarises findings from the **interim report on this evaluation**, which covered evaluation work conducted in winter 2023/24 and summer 2024,² and from the **final report on this evaluation**, which covered evaluation work conducted in summer 2025.³

The UK SHORE portfolio

UK SHORE is a **portfolio** of **schemes**. Some schemes consist of multiple **scheme rounds**. Larger schemes also include **scheme strands**, which often focus on specific technologies.

Each scheme or scheme round funds multiple **projects**. As some schemes require consortium working, multiple **organisations** are involved in each project. In these cases, each project has a **project lead**, who manages the consortia, and **collaborators**, who form part of the consortium. This evaluation draws on both project-level evidence collected from the project lead and organisation-level evidence, where multiple organisations responded from each project. It also includes some evidence from applicant organisations – all of those which applied (either successfully or unsuccessfully) for UK SHORE funding.

This evaluation covers the following four schemes within the UK SHORE portfolio (funding for these schemes totals £220 million):

- **Clean Maritime Demonstration Competition (CMD1)** rounds 1 to 4: £129 million of public funding for 139 mid-TRL projects⁴

¹ [DfT launches UK SHORE to take maritime 'back to the future' with green investment](#), 10 March 2022.

² Frontier Economics and SYSTRA Ltd. (February 2025). [Evaluation of UK SHORE](#)

³ [Include link to main report](#)

⁴ CMD5 and CMD6 are not in scope for this evaluation.

- **Zero Emission Vessel and Infrastructure (ZEVI)** round 1: £80 million of public funding for 10 high-TRL research projects. The scheme included three years of public funding followed by a three-year self-funded demonstration period
- **Transport Research Innovation Grants (TRIG)** annual rounds from 2021 to 2024: £1.5 million of public funding for 42 low-TRL research projects up to £45,000 each
- **Clean Maritime Research Hub (The Hub)**: £9.25 million of funding from UK SHORE and the Engineering and Physical Sciences Research Council (EPSRC) for a flagship research centre from September 2023 to March 2028.

Throughout this report, the phrase ‘UK SHORE portfolio’ refers specifically to the schemes in scope (which make up a subset of the first phase of UK SHORE). ‘ZEVI’ refers to the first round of ZEVI and ‘CMDC’ refers to the first four rounds of CMDC.

Key elements of the UK SHORE portfolio include:

- The schemes target technologies across the TRL range. Projects which successfully develop their technology can later apply for further funding from higher TRL schemes.
- Available funding per project is higher for higher TRL schemes.
- Alongside public funding, CMDC, ZEVI and The Hub drew on private industry match funding totalling £120 million. TRIG had no industry match-funding requirements.

Schemes are delivered with support from **delivery partners**, who collect and assess applications and undertake project monitoring. Innovate UK is the delivery partner for CMDC and ZEVI, and the Connected Places Catapult is the delivery partner for TRIG. Alongside DfT, the EPSRC is a joint delivery partner and co-funder of The Hub. Support from the delivery partners includes dedicated **monitoring officers**, who manage data sharing between organisations and the DfT and support project reporting. Key **stakeholders** are the Maritime and Coastguard Agency, which provides support on regulatory requirements, and the National Shipbuilding Office, which oversees all government interests in shipbuilding.

Terminology can vary across UK SHORE literature and reporting, including government and delivery partner web pages and monitoring data. To aid consistent reporting, the key terms described above are used throughout the Executive Summary and final report.

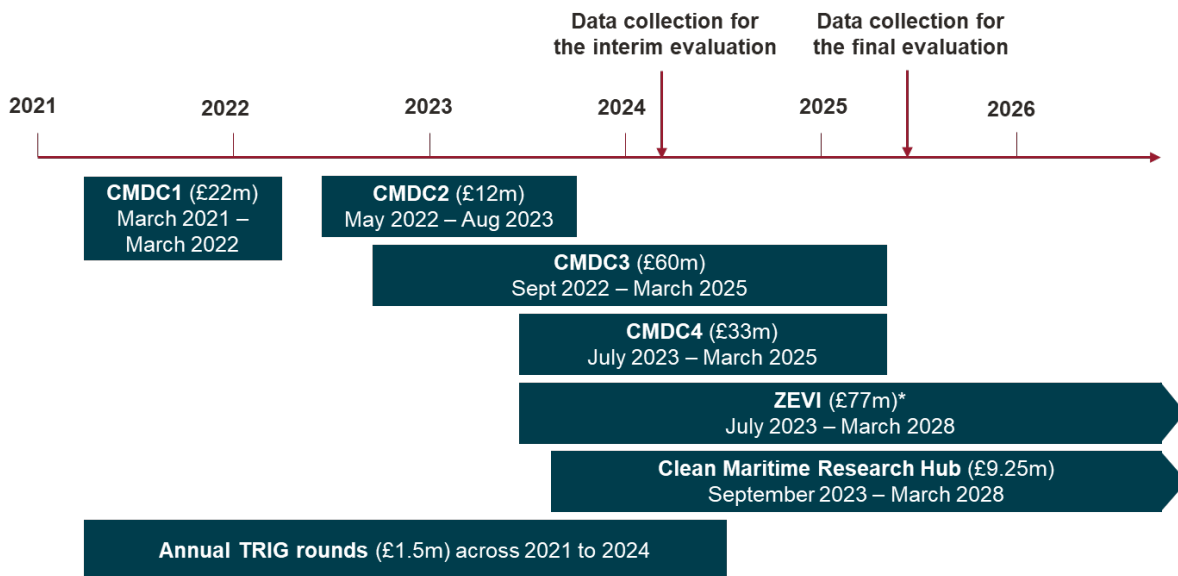
Aims of UK SHORE and approach of this evaluation

UK SHORE aims to reduce maritime emissions and support new high-skilled jobs across the country by accelerating the research into, and development of, clean maritime technologies. This evaluation assesses the extent to which UK SHORE is on track to achieve these aims.

Figure 1 sets out the schemes in scope for this evaluation and their level of completion at the time of data collection. Most of these schemes had completed by the point of data collection in June 2025. However, the Clean Maritime Hub and the demonstration phase of ZEVI projects were still underway. Later CMDC and TRIG rounds had completed only recently at the time of data collection, which limited the potential for longer-term impacts to materialise. Earlier

CMDC and TRIG rounds had completed some time earlier, but limited follow-on data to assess longer-term impacts was available.

Figure 1 A summary of the schemes in scope for this evaluation



Source: Frontier Economics

Note: * ZEVI is split into a funded stage (to March 2025) and an unfunded demonstration phase (from March 2025).

As a result, limited data on longer-term outcomes and impacts was available for this evaluation. Early stage outcomes include technology development, within-project job creation and improved private sector confidence. Longer-term outcomes include emissions savings and growth of the clean maritime sector. Looking at early stage outcomes provides evidence to assess whether UK SHORE is on track to see the anticipated longer-term outcomes in the future.

Therefore, the aim of this evaluation is to assess: what elements of the **process** have worked well and less well; the evidence for early stage **impact** and whether longer-term impacts can be expected to materialise; and whether it is likely that **value for money** will be achieved.

In addition, Frontier Economics and SYSTRA have developed a separate evaluation framework to assess the longer-term benefits of UK SHORE to 2028. This early stage evaluation can feed into a longer-term evaluation which may also look at later phases of UK SHORE funding not examined in this evaluation.

Process evaluation

The **process evaluation** considers the following process evaluation questions:

1. To what extent have interventions been delivered as planned? What changed and why?

2. How far have delivery processes supported the realisation of intended activities and outputs?
3. Which elements of scheme delivery are potentially transferable to other programmes?
4. What are the barriers to and enablers of delivery of the projects funded by UK SHORE?
5. What elements of the schemes have worked well to date, and what could be improved?
6. What are the experiences of applicants (successful and unsuccessful) in applying to the schemes?

It considers each stage of the process, covering scheme design, the application and assessment phases, project mobilisation, and delivery and knowledge sharing. Findings are presented at a portfolio level, with scheme-specific observations noted where relevant.

Impact evaluation

The **impact evaluation** considers the following evaluation questions:

1. To what extent, and through what mechanisms, did UK SHORE help to accelerate and support the development of clean maritime technologies relative to what would have happened in the absence of UK SHORE?
2. To what extent, and through what mechanisms, can environmental benefits be attributed to UK SHORE?
3. To what extent, and through what mechanisms, did UK SHORE improve the commercial prospects and opportunities for clean maritime in the UK?
4. To what extent is there evidence that UK SHORE has generated positive spillover benefits?
5. To what extent has UK SHORE achieved wider social objectives?

The evaluation is conducted at both a scheme and portfolio level. A mixed-methods, theory-based evaluation is used.

Value for money (VfM) evaluation

The VfM evaluation is made up of three evaluation sub-questions:

1. To what extent have UK SHORE and its component schemes demonstrated strategic fit with government priorities?
2. To what extent have UK SHORE and its component schemes been delivered in an economical and effective way?
3. To what extent are the socioeconomic benefits (monetised and non-monetised) of UK SHORE and its component schemes likely to exceed the public costs of delivery?

The evaluation draws on evidence from the process and impact evaluation and is conducted at the portfolio level.

Data used for this evaluation and its limitations

The evaluation is informed by the following **data and analysis**:

- **Primary data** collected for this evaluation:
 - two online surveys of successful applicants (December 2023 and May to June 2025)
 - interviews with successful and unsuccessful applicants for each scheme, delivery partners and key stakeholders (such as the Maritime and Coastguard Agency). A total of 30 interviews were undertaken in 2024 and 2025.
- **Monitoring data** collected by the UK SHORE delivery partners. Data collection varied across schemes. It typically included both quantitative data (collected at baseline and during project delivery or after project closure) and qualitative data (collected after project closure).
- **External evidence** sources such as carbon appraisal values, measures of sector-specific gross value added (GVA) per worker and industry expert reports.

The following limitations apply to the data sources used:

- Across quantitative data sources, **response rates** vary but are very low in some cases. As a result, the samples may not be **representative** of all projects: proportions of projects that reported certain outcomes or views (for example TRL completion) may not reflect the entire scheme. Additionally, the dataset is **incomplete** and so cumulative figures (for example job creation) will underestimate scheme-wide benefits.
- There is a risk of **self-report bias** as findings are predominantly informed by project self-reporting. Respondents may have been more likely to report positive results. Similarly, **self-selection bias** may be present due to the opt-in approach used for the qualitative interviews and surveys.

Given the limitations of the individual data sources, and to align with best practice for theory-based evaluation, the evaluation combines evidence from multiple sources. This allows for robust evidence-based findings based on multiple pieces of evidence rather than just one. More detail on the approach, evidence sources and limitations can be found in Section 2 of the final report.

Findings from the process evaluation

The process evaluation assesses what worked well and what could be improved in the delivery of the schemes and portfolio. This section presents key findings for each of the main stages of the process: competition, mobilisation and delivery phases. Scheme-specific observations are noted where relevant. More detail can be found in Section 3 of the final report.

The competition phase

UK SHORE stakeholders and delivery partners have **taken an iterative approach to scheme design**. Learnings from previous schemes have been used to improve future schemes. This, alongside the high quality of collaboration and communication between stakeholders and delivery partners, is a key strength of the portfolio.

Successful applicant organisations reported **high levels of satisfaction with the information and guidance on competitions provided by DfT and delivery partners**. Sixty-six out of 76 (87%) successful applicants to CMD1-4, TRIG and ZEV who responded to the surveys reported being satisfied with the information and guidance provided by the delivery partner leading the scheme. In interviews, applicant organisations (both successful and unsuccessful) also found the eligibility requirements to be clear and perceived the application process as well thought through.

Timescales for preparing bids varied, as did the time between the announcement of scheme rounds and the opening of the application process. Some applicant organisations **perceived the application timescales as challenging**. This was noted as a particular challenge in interviews with ZEV applicants. While the bidding period was longer than for other UK SHORE schemes (excluding CMD1), ZEV differed from other schemes in that it provided more funding and required a three-year demonstration period.

Delivery partners were responsible for the bid administration and assessment process, with assessors and interviewers independently contracted. In interviews, delivery partners noted that the pool of application assessors was limited. Assessors needed specific technical knowledge and specialist skills. Given the specialist nature of the industry, there could be commonality between assessor and applicant individuals and/or organisations. The pool of assessors has been expanded over time, but **recruiting assessors with the required level of technical expertise has posed some challenges for delivery partners**.

The mobilisation phase

The time between competition close and the notification of winners varied between schemes. **Most successful organisations (65 out of 76, 86% of survey respondents) were satisfied with the timeliness in which the outcomes of their applications were communicated**. Interview feedback was largely consistent with the survey findings, with most organisations finding the outcome of their bid to have been communicated in a timely manner.

Most responding organisations were satisfied with the timeliness of funding allocation but this varied by scheme round. Out of 78 respondents to the surveys, 55 (70%) were satisfied. Satisfaction levels were more mixed for ZEV, CMD3 and CMD4 respondents than they were for other scheme rounds. In interviews, some organisations reported a delay in funding being issued to them, which had contributed to project delivery delays and had negatively impacted project delivery. Accordingly, some requested more flexibility in deadlines for project completion.

The delivery phase

Most projects met their objectives and milestones within projected timelines. However, around half of ZEVI projects were delayed. Two dropped out of the programme as they were unable to meet the requirements for a three-year demonstration period. Some projects argued that **the three-year delivery period for ZEVI was too short.** However, timelines for the delivery were set up to align with the financial year funding deadline of March 2025.

The **most frequently reported barriers to project delivery** across all schemes related to procurement or supplier challenges (78%), regulatory barriers (72%), technological limitations (64%) and challenges with consortium partners or collaborators (58%).

Challenges for projects in navigating regulation represent a key learning from the delivery of the UK SHORE portfolio. In interviews, projects across all schemes described encountering unexpected regulatory issues for which they had not set aside the time or funding to address. Delivery partners also noted that regulatory processes had led to delays and unforeseen costs to projects.

Consortium working appeared to be effective for most funded projects. However, some projects had experienced barriers due to consortium partners not delivering as intended or withdrawing during delivery. Projects reported that benefits from consortium working included enhanced cross-disciplinary working and, for The Hub, enhanced legitimacy of research outputs.

Delivery partners and their monitoring officers were seen to be a key strength of UK SHORE. Survey and interview participants highlighted their pragmatism, flexibility and openness of communication.

Organisations and one delivery partner expressed a desire for **more technical knowledge sharing and networking opportunities** both within and between UK SHORE schemes. Respondents felt that opportunities for these could be presented before, during and after project delivery. Suggested ideas included more in-person engagement events and a UK SHORE alumni network.

Findings from the impact evaluation

The impact evaluation assesses the technology, environmental, commercial, spillover and social outcomes of UK SHORE. The portfolio-wide findings across these benefits are discussed below, before a brief discussion of specific findings from each scheme. More detail can be found in Section 8 (portfolio-wide) and Sections 4 to 7 (scheme-specific) of the final report.

Portfolio-wide findings

The impact of creating a 'portfolio' of schemes

UK SHORE funding has **supported technologies across a range of TRLs** and has **created a pipeline of projects**. These represent key aims from the initial design of the portfolio.

Twenty-nine per cent of organisations funded by UK SHORE have been funded by multiple schemes or scheme rounds, providing indicative evidence of a pipeline. This was also evidenced in interviews: for example, both of the ZEVl organisations interviewed were advancing on technologies that they had worked on in CMDC rounds.

However, more could be done to strengthen the portfolio effect of UK SHORE. In particular:

- There is **limited evidence of impactful portfolio-wide knowledge sharing**, such as presentations or networking across schemes or scheme rounds. Stakeholders expressed a desire for these as part of the process evaluation.
- The **timing of schemes was not optimal to maximise the portfolio effect**. Lower TRL schemes (for example CMDC) were not always complete by the time higher TRL schemes started (for example ZEVl), meaning that projects' learnings were not available in time for the next scheme. This timing was a necessity due to the three-year spending review period.

Technology development and additionality

There is evidence that **funding has been successful at developing technology**. Across various sources of evidence and all schemes, organisations, delivery partners and wider stakeholders were typically positive that UK SHORE had supported the development of the funded technologies.

However, **it is challenging to accurately capture technology development**. Firstly, TRL development is often seen as a measure of project success. However, TRL regression (where a technology's TRL falls) also represents a valuable outcome of innovation funding because of the important learning it generates. 'Failing faster' is a legitimate benefit from public funding and some projects are expected to fail.

In addition, the impact of UK SHORE on TRL was difficult to evaluate consistently. In monitoring data, no CMDC1 and CMDC2 project reported 'project failure' but almost a quarter reported TRL regression. TRL regression for CMDC4 was much less common (sample sizes for CMDC3 were too low to draw meaningful conclusions and the ZEVl scheme round is not yet complete). It is unclear whether lower incidence of TRL regression in later schemes was due to improved reporting or better technology development in later schemes.

Across CMDC and ZEVl project leads who responded to monitoring data, roughly one-third of projects had seen TRL improvement (43 out of 118). Similarly, one-third of The Hub projects

had increased in TRL between 2024 and 2025, as had almost all TRIG projects (39 out of 40 responding projects).

UK SHORE's impact on technology has largely been additional compared to what would have been achieved without government support. This is clear from multiple evidence sources:

- **Participants:** Roughly 60% of survey respondents (43 out of 70) reported that their project would not have gone ahead without UK SHORE funding. No respondent reported that it would have happened in the same way without UK SHORE funding. End-of-project reports and interviews demonstrate a high degree of self-reported additionality.
- **Delivery partners:** In interviews, one delivery partner reported that many CMDC and ZEVI projects would have progressed at a slower pace without UK SHORE funding due to the high risk of research and development projects.

Emissions savings

Emissions savings are predominantly expected to occur in the future, once technologies scale up and roll out. However, one CMDC4 project reported that substantial savings had already been achieved by replacing the diesel power generator with shore power at a shipyard (43,362 tonnes of carbon dioxide equivalent (tCO₂e) per year).

Evidence on expected emissions savings is self-reported in all CMDC end-of-project reports. There are numerous data quality issues which mean that it is not possible to aggregate responses to a total 'projected emissions savings' from UK SHORE at this stage.

Therefore, **case study analysis** was undertaken by sector and technology experts (ERM) to validate some projects' reported realised and potential emissions savings. The analysis reviewed and cross-checked the approach and assumptions used by four projects across the CMDC3 and CMDC4 scheme projects that reported at least some emissions savings.⁵

As emissions savings vary across the technology and vessel types, the case study analysis selected projects from a range of technologies and vessel applications. The resulting four projects assessed were: combustion power trains applied to medium size ships, efficiency improvements to bulk carriers, and both electric powertrains and supporting infrastructure for crew transfer vessels. The case study analysis suggested that full-scale deployment of these technologies could result in annual savings of 2,000tCO₂e to 174,000tCO₂e per project. These emissions savings may be higher than the average project as the case studies selected only projects with at least some emissions savings and with complete reporting. In addition, the savings will only be achieved if projects successfully scale up.

⁵ Reporting quality was improved in CMDC3 and CMDC4 compared to CMDC1 and CMDC2, so CMDC1 and CMDC2 projects were not included.

Investment impacts

One aim of the UK SHORE portfolio was to **increase investor confidence and generate private sector investment** in clean maritime. The impact on organisation and project-level investment can be considered:

- **At project start:** Total industry funding co-invested alongside the public investment ('match funding') was £120 million as of December 2023, in line with DfT expectations.
- **During project delivery:** Around a quarter of organisations which reported on the generation of additional funding (103 out of 376) said they had generated public or private funding beyond matched funding during the delivery phase, equivalent to £40 million across CMDC3, CMDC4 and ZEVI schemes, of which £31.5 million was from the private sector.⁶
- **After project completion:** Two-thirds (27 of 39) of 2025 survey respondents expected to secure more investment in the next two years.

Jobs supported or created

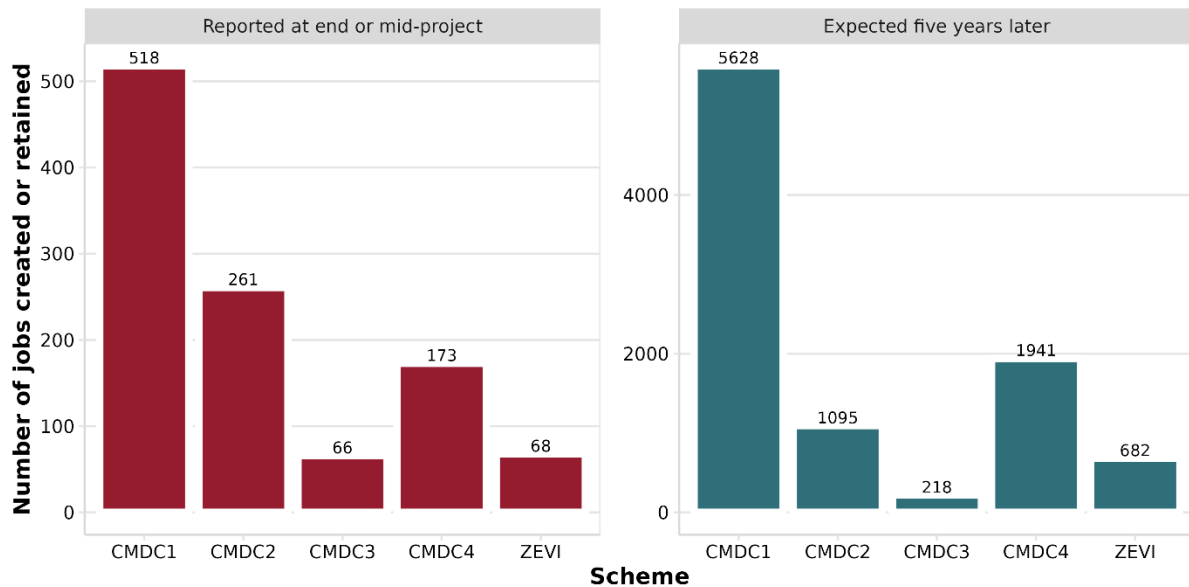
Another key aim of the UK SHORE programme was to create jobs. Evidence shows that:

- In data collected during project delivery or at the end of projects, organisations reported that **1,086 UK jobs had been created or retained as a result of CMDC1 to CMDC4 and ZEVI** by June 2025 (Figure 2). Note that these jobs cannot be considered additional in the UK economy. This may underestimate job creation/retention as not all organisations provided monitoring data; response rates were lowest for CMDC3 and ZEVI.
- Projects stated that they expected to create/retain a total of **9,565 jobs in the five years after data collection**. These are expectations and therefore may not be achieved.
- Additional job creation was reported by The Hub and TRIG, although the numbers involved were smaller. For example, between April 2024 and 2025, the universities involved in The Hub reported creating 10 jobs.

CMDC and ZEVI job creation is below the business case expectations set out by DfT at the start of the UK SHORE programme. This may reflect the incomplete data. In addition, the business case methodology may not create a suitable benchmark as it relied on job creation data reported by CMDC1 organisations.

⁶ Total figures and a split between public and private cannot be calculated for other schemes.

Figure 2 Scheme-level job creation and retention



Source: End-of-project monitoring data and business case expectations

Note: Figures refer to end of project (for CMDC) and during project delivery (for ZEVI), and five years after this point (in 2027 for CMDC1, 2029 for CMDC2, 2030 for CMDC3-4 and ZEVI). Note that charts are not on the same scale. Schemes and scheme rounds differ in various ways (such as total funding, number of organisations and projects, and response rates) so comparisons should not be drawn across these.

The impact on the clean maritime sector

In interviews, stakeholders and project teams highlighted that UK SHORE **had brought the industry together to work on clean maritime**. This was particularly true for The Hub, which had supported the creation of a ‘clean maritime research community’. They also commented that UK SHORE had **‘kicked off’ the clean maritime market**, positioning the UK well globally.

Despite projects being at an early stage at the time of data collection, **some commercial benefits had been achieved**:

- Some CMDC organisations reported increased revenue generation, profits or cost savings in their end-of-project monitoring data (summarised in the scheme-level findings below).
- Around half of CMDC and ZEVI project leads who provided monitoring data reported improvement in their commercial readiness level (CRL) or market readiness level (MRL). As with TRL, there were examples of CRL regression and it is unclear whether this reflects actual regression or data reporting issues.

For schemes with earlier completion dates (CMDC1 and CMDC2, TRIG21 and TRIG22), additional commercial benefits may have materialised, but data was not available to capture this.

Across evidence sources, organisations indicated that they anticipated that **commercial benefits would be seen in the future**. For TRIG and CMDC in particular, organisations reported that UK SHORE had helped move them towards commercialisation.

There were examples of **spillovers into and out of the clean maritime sector** as a result of UK SHORE funding. Roughly three-quarters of survey respondents (30 out of 39) identified uses for their project in other sectors, particularly other transport sectors. The Hub had also brought in researchers from other fields who were previously not working in maritime.

Findings from the scheme-level impact evaluation

Clean Maritime Demonstration Competition rounds 1 to 4 (CMDC)

The findings for CMDC typically align with the findings from the portfolio-wide evaluation.

- **Projects were positive about the additionality of CMDC.** Across the 2023 and 2025 surveys, 37 out of 57 (65%) of CMDC respondents said their project would not have happened without UK SHORE and no projects reported that their projects would have happened in the same way without UK SHORE.
- **Projects were typically positive about the success of the project.** All responding CMDC1 and CMDC2 organisations reported full or partial achievement of their intended project. However, findings on technology progress varied by scheme round. For CMDC1 and CMDC2, TRL regression was particularly high. In contrast, only one CMDC4 project reported a TRL regression (response rates for CMDC3 were too low to draw conclusions).
- Around a **quarter of organisations** (of those that provided monitoring data) **had generated additional funding**. In addition, project leads reported in end-of-project reports that CMDC had **supported future commercial benefits**, for example by helping to develop technology and identify customers.
- Some limited **commercial benefits had been achieved** by the time of data collection. For example, 27 CMDC3 and CMDC4 organisations reported profit increases totalling £1.6 million by the end of their project. Around half of CMDC1 and CMDC2 organisations that provided monitoring data reported revenue generation or cost reduction (totals not available).

Zero Emission Vessel and Infrastructure round 1 (ZEV1)

As detailed, only the first round of ZEV1 is in scope for this evaluation. This scheme round is still midway through delivery so there is limited data on impact to date.

Some difficulties had been experienced as two projects dropped out. Of the two ZEV1 projects interviewed, both highlighted delays, although they both reported that their project would not have gone ahead without ZEV1 funding.

As of June 2025, 68 jobs had been created and four out of 20 responding organisations had generated additional funding. Interviews and monitoring data suggest that organisations are

typically **optimistic about the potential commercial benefits** from their technologies given conversations with prospective customers and the industry sentiment.

Transport Research and Infrastructure Grants annual rounds 2021 to 2024 (TRIG)

Impact findings for TRIG are generally in line with the portfolio-wide findings. Response rates to the monitoring data are high (40 out of 42), enhancing the confidence in findings.

- Projects **typically self-reported success and additionality impacts from TRIG**. All respondents said TRIG had helped them to progress towards, or to, proof of concept or feasibility. Thirty-nine out of 40 respondents reported TRL development. Other measures of success included creating plans for, or holding, a trial or demonstration.
- **Half of TRIG22 to TRIG24 lead organisations had generated additional** public or private **funding during their project** (potentially including UK SHORE investment from other schemes). One-third of responding organisations (12 out of 36) had secured further equity funding by the end of their project.⁷
- In end-of-project reports, all TRIG projects reported that the **funding had helped them move towards commercialisation**, providing a foundation they could build on. In end-of-project data, they listed next steps such as looking for further investors, applying for intellectual property (IP) protection, exploiting their IP or a market launch of the technology.

The Clean Maritime Hub (The Hub)

The Hub is due to run to March 2028. The evaluation therefore only has early evidence of impact.

In its recent mid-term review (May 2025, conducted by external experts), The Hub met the majority of its assessment criteria. It self-reported as being '**on track**' across all four key research areas and was **meeting the majority of its key performance indicators (KPIs)**.

A key benefit of The Hub has been its contribution to the creation of a **clean maritime research community**. It has brought researchers into clean maritime from other academic fields, suggesting there has been an increase in the amount or quality of clean maritime research conducted.

A unique feature of The Hub is its intended impact on **policy**. Despite recruitment delays for this workstream, members of The Hub noted that it allowed them to engage with policy on a greater scale than they otherwise could. It is difficult to measure whether there have been tangible impacts on policy development at this stage.

⁷ This data was not available for TRIG21.

Findings from the value for money (VfM) evaluation

The VfM assessment considers three key elements: the strategic fit of UK SHORE against government objectives; whether it has been delivered economically and effectively; and a comparison of costs and benefits.

Each of these is set out below, with more detail provided in Section 9 of the final report. The economic and effective delivery sub-question was covered in the interim report only (see Section 9) with no additional evidence in the final evaluation. Like the impact evaluation, the VfM evaluation focuses on early stage benefits and evidence of expected longer-term benefits. A fuller VfM evaluation should be undertaken once longer-term benefits have materialised.

Strategic fit

Strategic fit assesses the extent to which UK SHORE has delivered impacts which support the key government objectives in alignment with the initial aims of the programme.

Evidence from the impact evaluation suggests that **UK SHORE is well aligned with key government strategic priorities**, in particular:

- Alignment with the **Maritime Decarbonisation Strategy**: UK SHORE is supporting the long-term decarbonisation of maritime. Projects have led to a development in technology, with strong self-reported evidence of additionality. There is limited evidence of emissions reductions to date, but projects self-reported expected benefits in the future.
- Alignment with the **‘Kickstarting economic growth’ mission**: There is evidence of growth benefits to date, including the creation and/or retention of 1,086 jobs as a result of CMDC1 to CMDC4 and ZEVI as of June 2025 (noting that these are not additional jobs but are assumed to be displaced from elsewhere). In addition, survey evidence finds that 35% of responding organisations are located in coastal areas (little data is available on regional distribution of growth benefits).
- Alignment with **Modern Industrial Strategy** objectives to raise private investment in the UK: A total of £120 million of private matched funding had been leveraged as a result of the four UK SHORE schemes in scope for this evaluation as of December 2023. There is evidence of further leveraged investment, with more than one-quarter of reporting organisations generating additional funding during the delivery phase. Projects reported that they expected more investment in the future given the relatively early stage of UK SHORE.

Economic and effective delivery

The assessment of economic and effective delivery draws primarily on the process evaluation. It compares budgeted and actual funding costs, and expected and actual activities and outputs, alongside a qualitative understanding of stakeholder views on delivery.

Overall, the process evaluation **does not identify any significant inefficiencies** in the competition, mobilisation or delivery stages of UK SHORE. Costs, activities and outputs are approximately in line with expectations. A key strength of the portfolio-wide approach is the use of **learnings from previous schemes to improve the process of later schemes**. Evidence is not available to assess whether the portfolio approach has led to lower management costs.

Comparison of costs and benefits

For this analysis, estimates of project-level job creation and emissions savings were monetised, based on the available data. Due to the early stage nature of the evaluation, **it was not possible to calculate a robust benefit-cost ratio (BCR)**. Instead, a combination of what-if analysis, breakeven analysis and case studies were used. This analysis assesses whether it is plausible to believe that UK SHORE could deliver benefits that exceed its public funding costs.

Value for money is likely to be achieved based on job creation/retention and emissions savings benefits, even taking each in isolation:

- **Job creation and retention:** Each job is assumed to generate GVA per worker around £20,000 higher than the UK national average. Jobs are considered over the five-year period following scheme completion, assuming that projects' expectations are met.⁸ Under these assumptions, the GVA benefits from realised and expected job creation/retention alone exceed the UK SHORE cost. This would be true even if only two-thirds of the benefits were realised, for example due to optimism bias, incorrect attribution to UK SHORE or an overestimate of the value of each individual job.
- **Emissions savings:** Four case studies with at least some emissions savings across a range of technologies were selected for a detailed review of projected emissions savings. If emissions savings are generated as estimated by ERM, the monetised benefits *from these four projects alone* exceed the entire cost of the UK SHORE programme. To achieve breakeven, at least 77% of the benefits must be attributable to UK SHORE if only these four projects are considered. However, it is highly likely that more than four projects will generate emissions savings. This leads to a strong likelihood that the BCR based on emissions savings alone is greater than 1.

In addition, the portfolio delivers benefits which are not monetisable as part of this evaluation (because it is either not proportionate or feasible to do so). These include:

- **Local economic benefits** produced by generating high-productivity jobs in more deprived areas (for example, 35% of projects reported being located in coastal areas)

⁸ This is a simplifying assumption in absence of suitable alternatives to understand where UK SHORE project jobs come from.

- **Job creation in organisations which did not receive UK SHORE funding** (for example in the supply chain)
- Additional environmental benefits such as **water pollution and air quality improvements around ports.**

Considering the non-monetisable benefits alongside the monetised benefits suggests that it is **very likely that UK SHORE will deliver value for money.**

Frontier Economics Ltd is a member of the Frontier Economics network, which consists of two separate companies based in Europe (Frontier Economics Ltd) and Australia (Frontier Economics Pty Ltd). Both companies are independently owned, and legal commitments entered into by one company do not impose any obligations on the other company in the network. All views expressed in this document are the views of Frontier Economics Ltd.