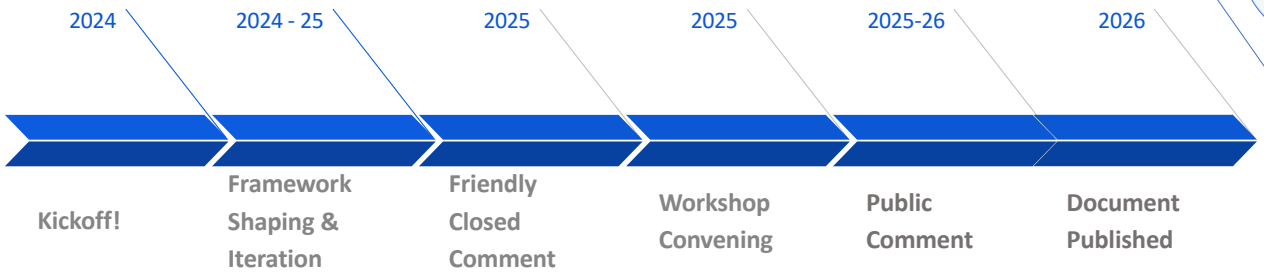
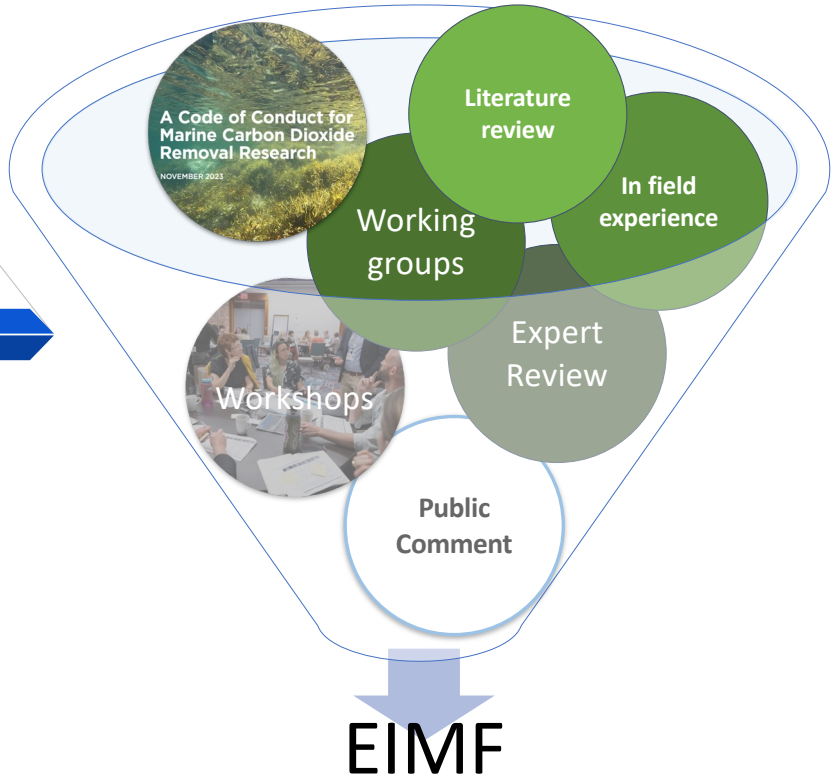
The Ocean Alkalinity Enhancement Environmental Impact Monitoring Framework

29th April 2026

Framework development & consensus building





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Document structure & key components

The "what"

Environmental Impact Monitoring Framework (EIMF) Recommendations

- Executive summary
- Background on OAE
- OAE methods and unique environmental considerations
- EIMF (Stage-gate approach to responsible research scale up)

The "how"

Practical Guidance on Implementation of the EIMF

- Stakeholder & Public Involvement
- Key Parameters for Environmental Monitoring, Measurement & Sampling techniques
- Relevant Regulations
- Operational Health & Safety
- Transparent Publication & Reporting
- Conclusions

Guiding Principles

Aim

Provide a reliable set of guidelines to evaluate the environmental merits of OAE approaches in the field.

- Monitoring is not a substitute for risk mitigation
- Staged progression through decision gates
- Based on best available knowledge and a *complement* to standards & regulations
- Tailored for OAE, but flexible across OAE pathways
- Designed for practical implementation

Phased and gated approach

	Stage 1 Planning & Preparation	Stage 2 Methods Validation	Stage 3 OAE Field Pilot	Stage 4 Continuous Dosing & Monitoring
Indicative Scale *(tons of alk material)*	0 tons	10s of tons	100s of tons	≥ 1000s of tons
Aim	To understand the risks, opportunities, and scientific potential of the site.	To demonstrate and validate dispersal and monitoring methods are working as intended.	To collect data at a scale where CDR-relevant processes can be validated and monitor for outcomes on priority risk metrics.	To simulate long-term operational conditions and assess sustained social and environmental benefits and risks.
Key Activities & Analysis	Identify, engage, & co-create with impacted parties & decision makers Collect materials safety data Analyze physics and chemistry of receiving water Identify local sensitivities, predict environmental impacts and design research that mitigates risk Design baseline collection plan	Establish multiple lines of communication with community members Create an operational health & safety protocol Collect baseline data Conduct full environmental monitoring and dispersal operations test Measure for predicted impacts and surface additional knowledge gaps	Increased monitoring in line with scale and local priorities Extend baseline to understand seasonal and inter-annual variability Measure impacts to determine long-term monitoring needs To the extent possible validate models with field observations	Align with impacted parties and authorities on reporting framework Conduct sustained environmental monitoring campaign of critical parameters Analyze long-term trends and surface any unexpected outcomes
Stage Gate Criteria	If the scientific potential is high, monitoring seems possible, and the risks are determined to be tolerable, continue to the next stage.	If the predicted impacts are validated in the field and additional knowledge gaps are sufficiently closed, continue to the next stage.	If the field trial is successful and observations and suitable models determine low environmental risk to continuous dosing, continue to the next stage.	If long-term data indicates sustained benefits and manageable risks, continue or scale responsibly. Otherwise, halt or revise the approach.

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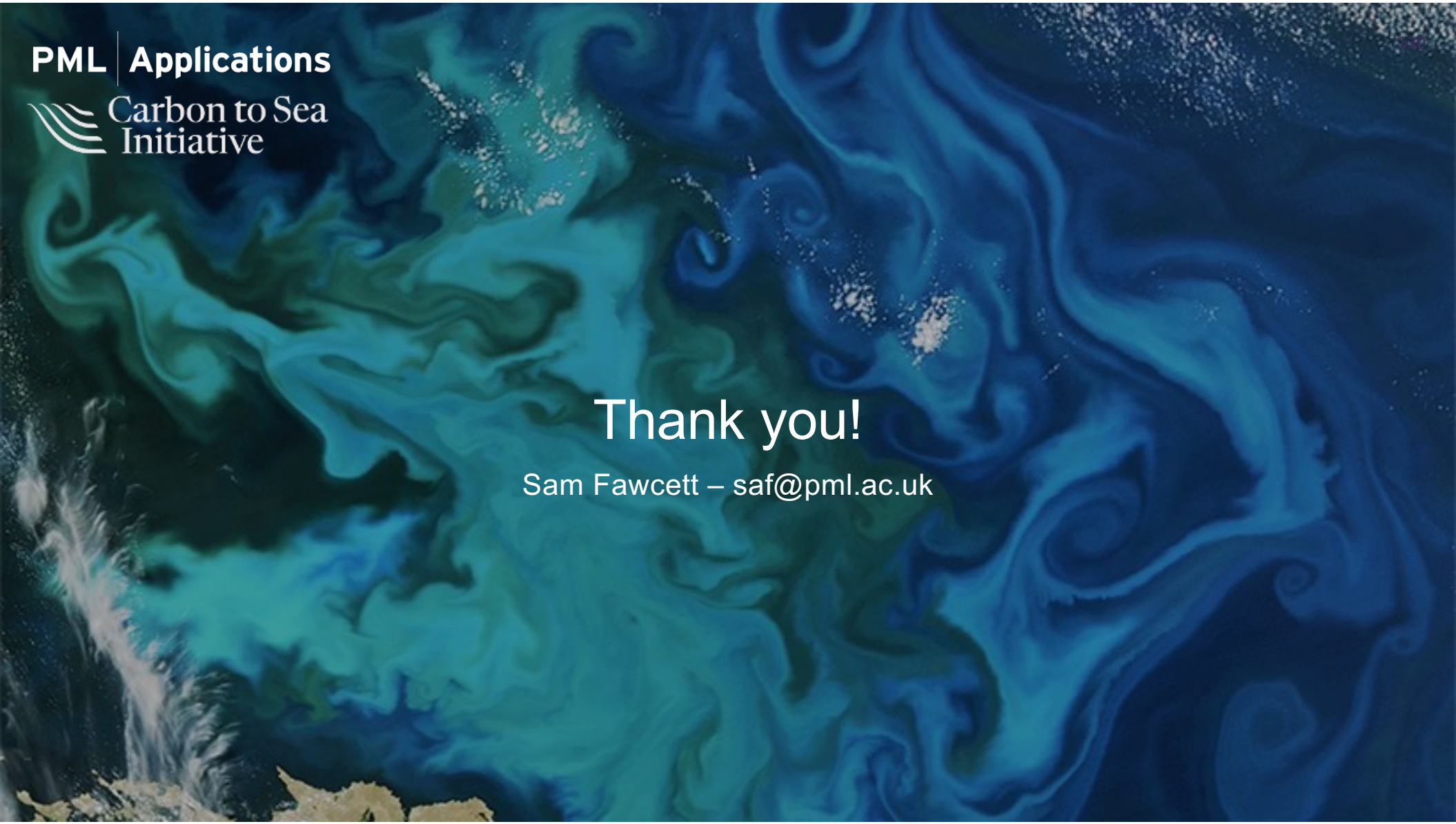
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Thank you!
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