

Project details

Application team

CLIMATE SOLUTIONS EXCHANGE LIMITED

Organisation details

Type	Business
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Team members

Full name	Phone number	Email
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Andy Howard		
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Application details

Competition name

SBRI - Climate and Environmental
Risk Analytics for Resilient Finance:
Phase 1

Application name

Integrating digital Earth Observation
environmental data into financial
services decision making

When do you wish to start your project?

2 May 2022

Project duration in months

3 months

Has this application been previously submitted to Innovate UK?

No

Who made you aware of the competition?

Innovate UK website

How long has the company been established for?

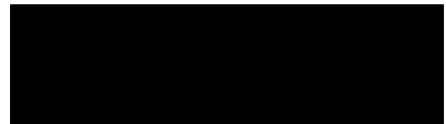
Established 1 to 5 years

What is your organisation's primary area of focus?

Technology: hardware, software and services

Equality, diversity and inclusion

Have you completed the EDI survey?



Public description

Public description



This application seeks to address the lack of consistent, scalable, science-based and timely climate and environmental data for farming and land management businesses ("FLMs") and those financial services companies ("FSCs") that support them. New data that captures detailed knowledge of land use, biodiversity and carbon is rapidly becoming essential for risk decision-making and reporting in bank lending and insurance as the UK transitions to new land management subsidy regimes and net zero.

Technology Solution

The proposed innovative solution will deliver consistent, scalable and science-based data on the climate and environmental credentials of FLMs for multi-faceted uses across FSCs, supporting the changing land management practices that will deliver carbon capture and improved biodiversity.

The technology integrates Earth Observation data streams with geographically accurate land parcels and translates this into timely, accessible and relevant data to FSCs, for the purpose of understanding, assessing and acting on the financial risks and opportunities from climate and environmental change.

Key FSC use cases (none of which are possible today) include:

- enhanced credit risk descisioning, for the c.£20bn market in bank lending to FLMs, that takes account of the shift in land management practices towards habitat restoration and environmentally sustainable land management (and the monetisation potential arising from this)

- reliable, science-based quantification and valuation of changes in Natural Capital (e.g. carbon and biodiversity) to underpin insurance and lending security calculations
- consistent, accurate disclosure of scope 3 financed emissions and broader net environmental impact from lending to the agricultural and land management sector.

Scalability and readiness

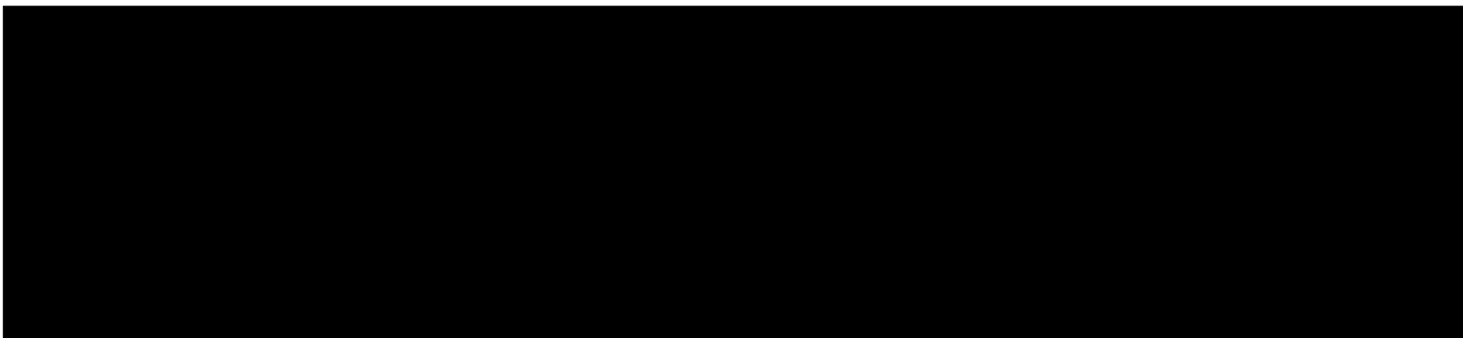
FLMs are beginning to use drone technology to measure their activities -- crop management, forestry surveys etc. This same technology is used to collect the data necessary to accurately measure carbon and monitor biodiversity, making the digital environmental data output entirely scalable.

The foundations of the solution have been developed, including relevant machine learning algorithms for forestry and woodland, a map-based technology platform and a user interface. Work is ongoing to extend capabilities to other habitats. This grant is therefore focused on marrying the foundation technology with financial services use cases that will revolutionise environmental risk management.

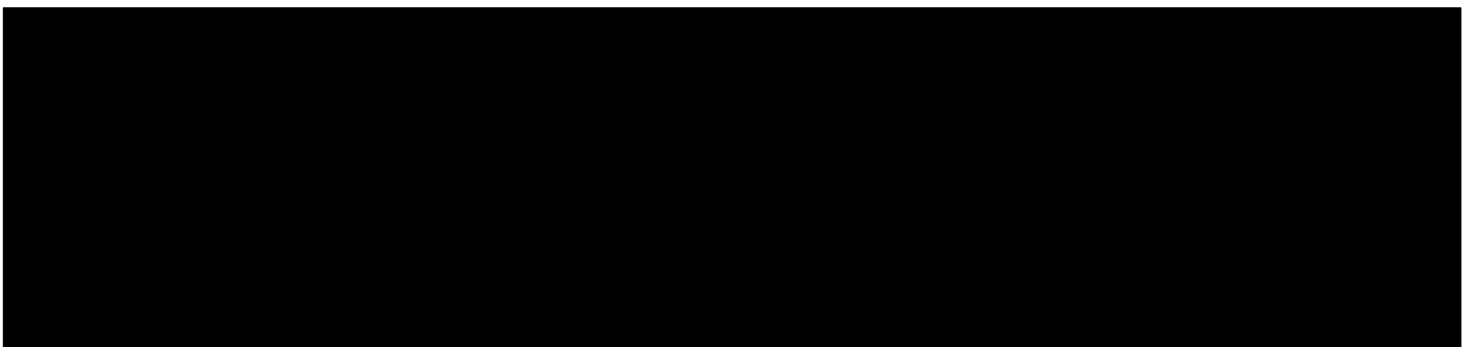
This application brings together two highly motivated and relevant companies to support the delivery of this proposed solution across what is expected to be the whole of the rural land management enterprise sector and provides the opportunity to create an FLM and FSC environment that together can deliver substantial positive climate and environmental impact.

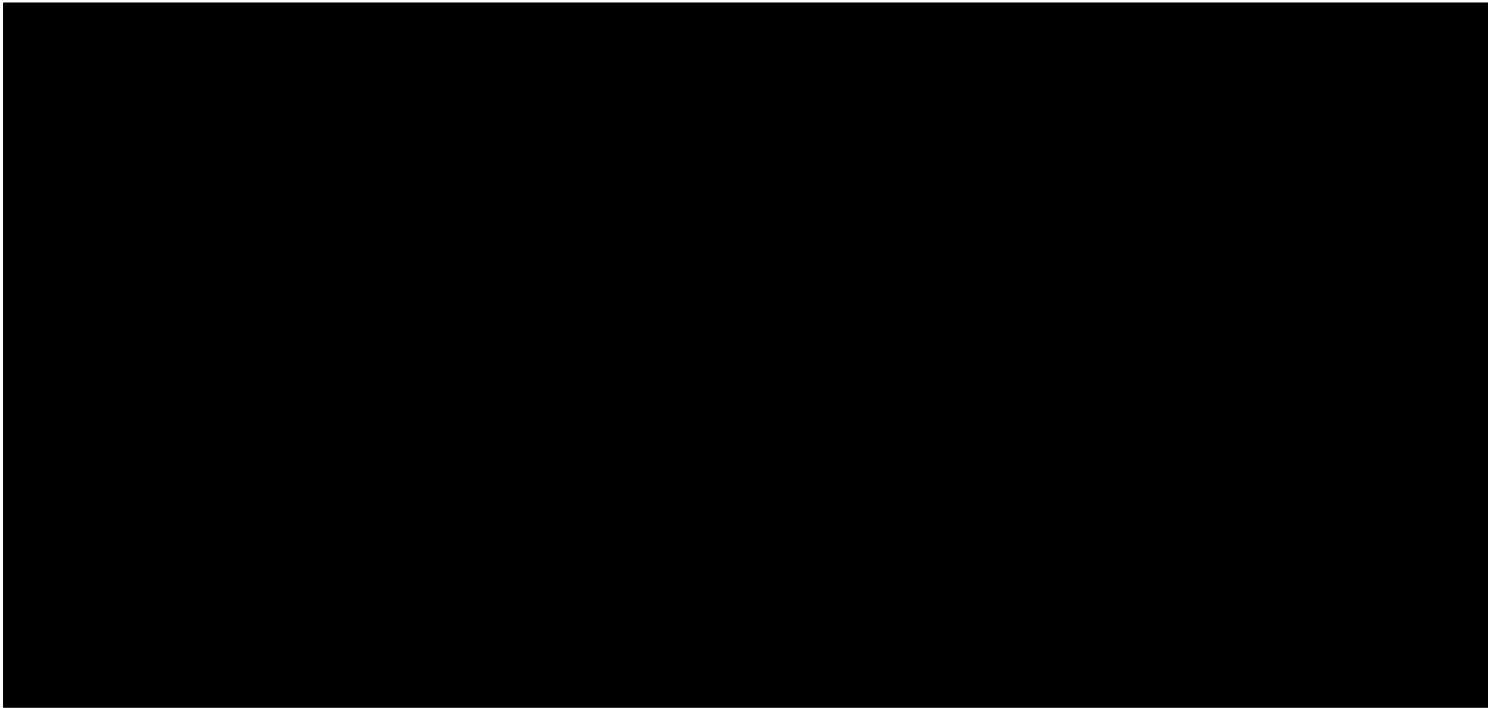
Project summary

Project summary

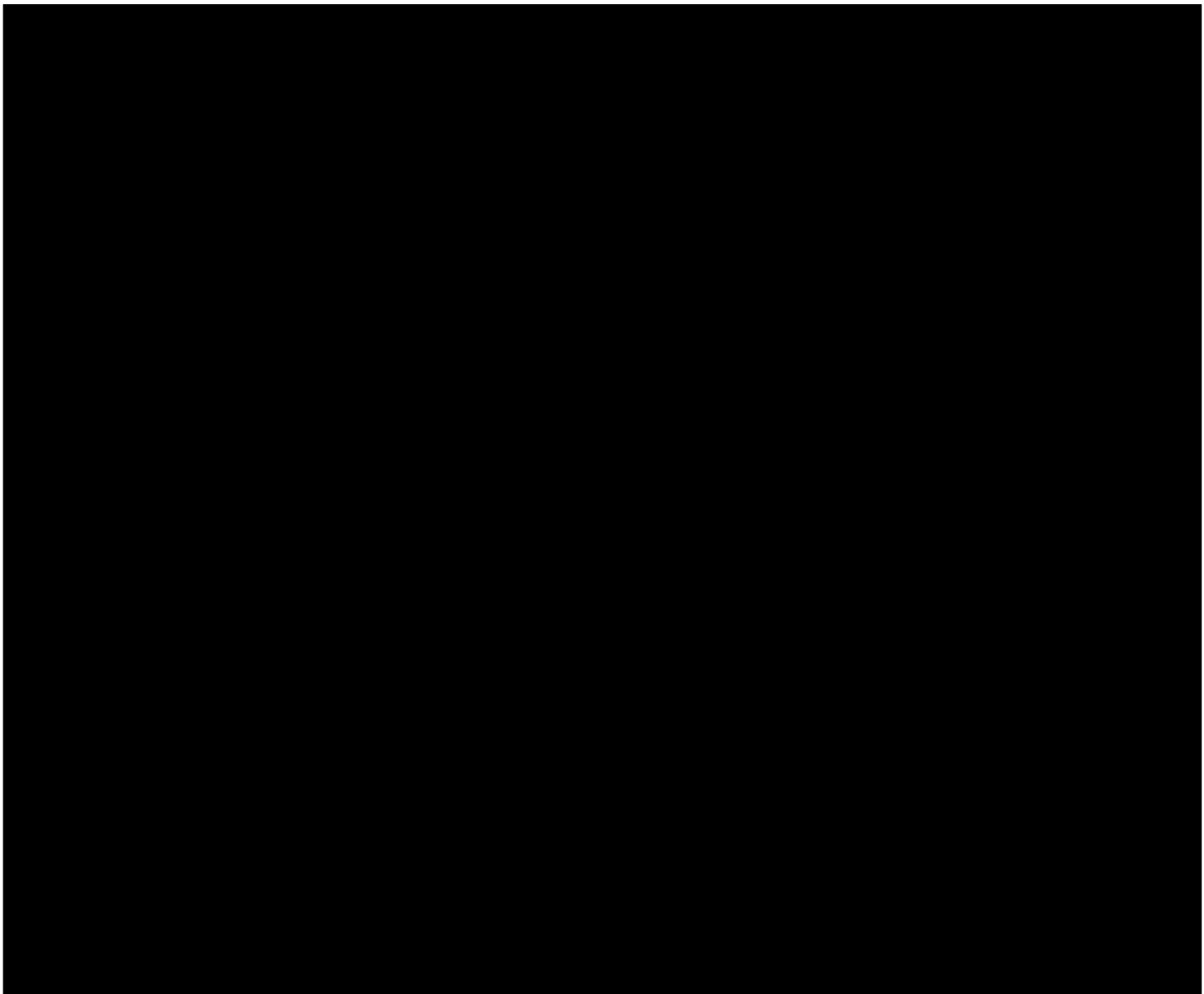


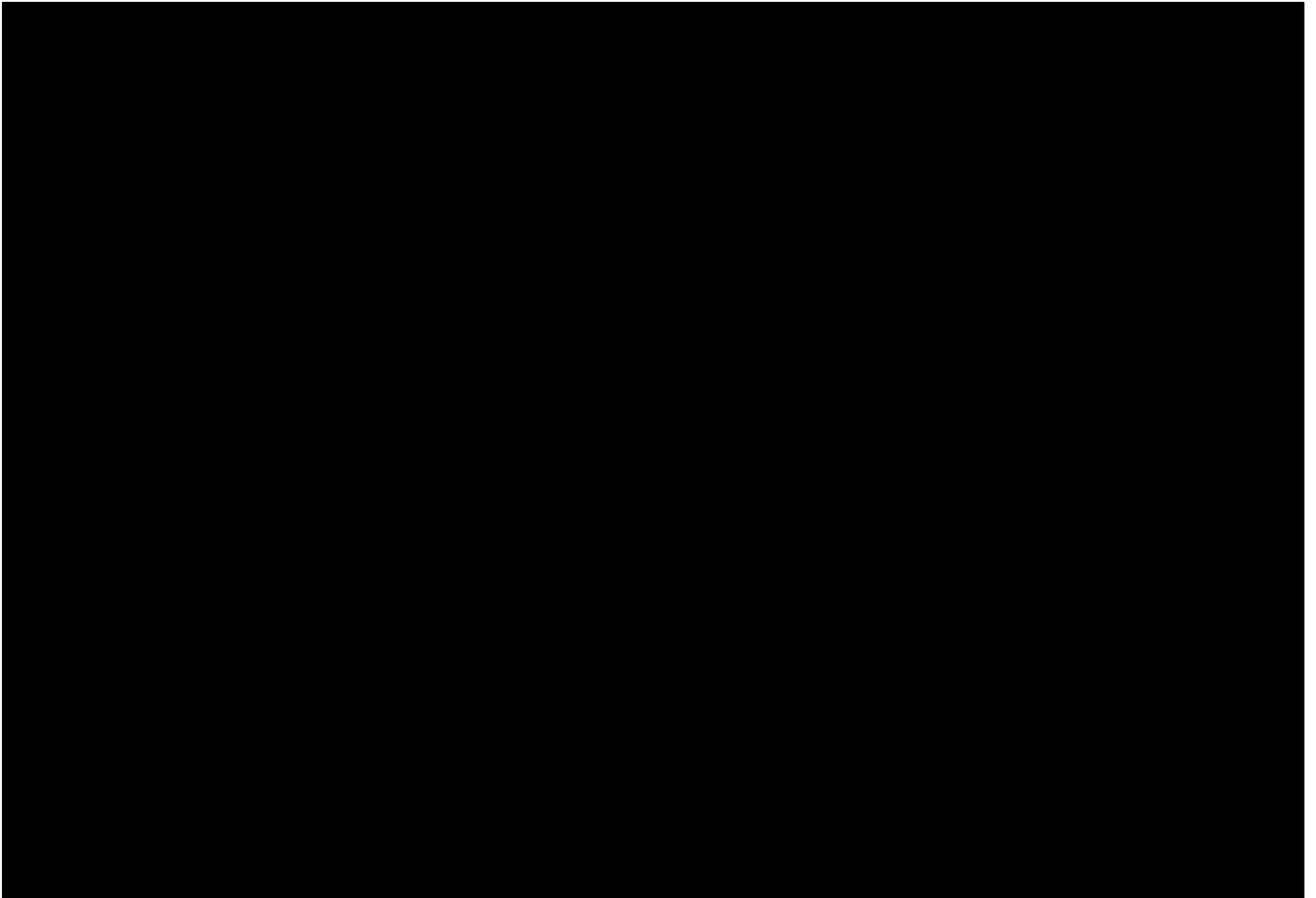
Technology Solution





Scalability and readiness





Application questions

1. Applicant location (not scored)

Applicant location (not scored)

Lead organisation:

Climate Solutions Exchange Ltd, Barningham Coach House, Barningham, Richmond, North Yorkshire, DL11 7DW.

Subcontractor:

Perigon Partners Ltd, 22 Stafford Street, Edinburgh, Scotland, EH3 7BD.

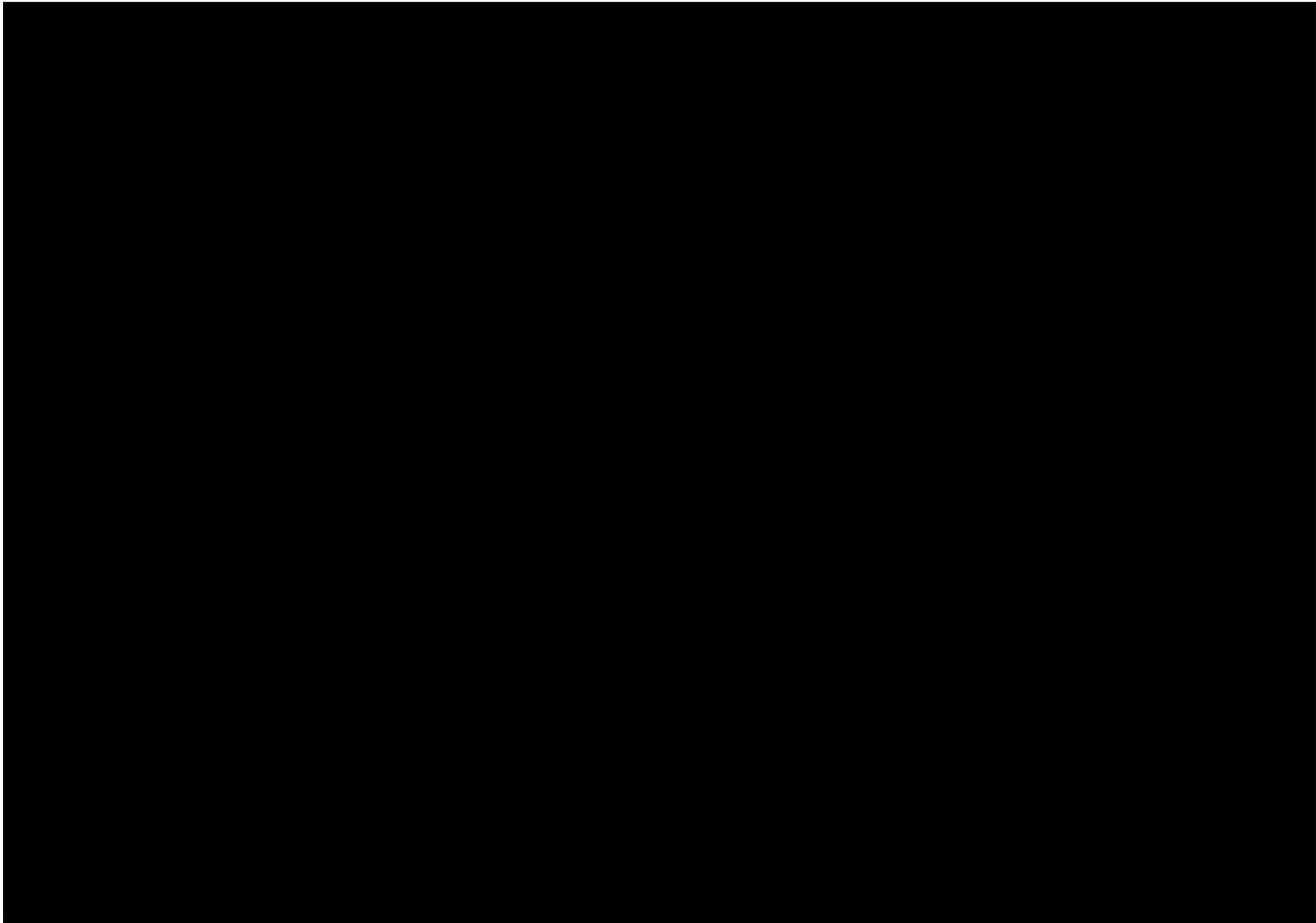
2. Themes (not scored)

Themes (not scored)

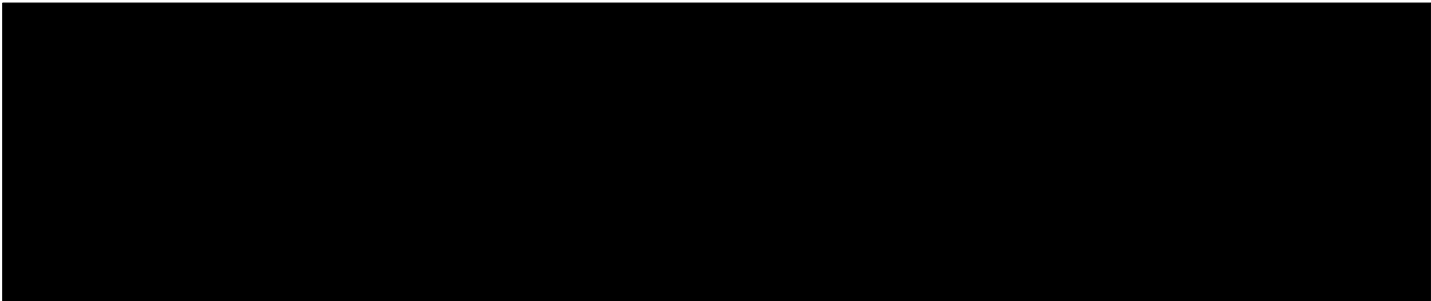
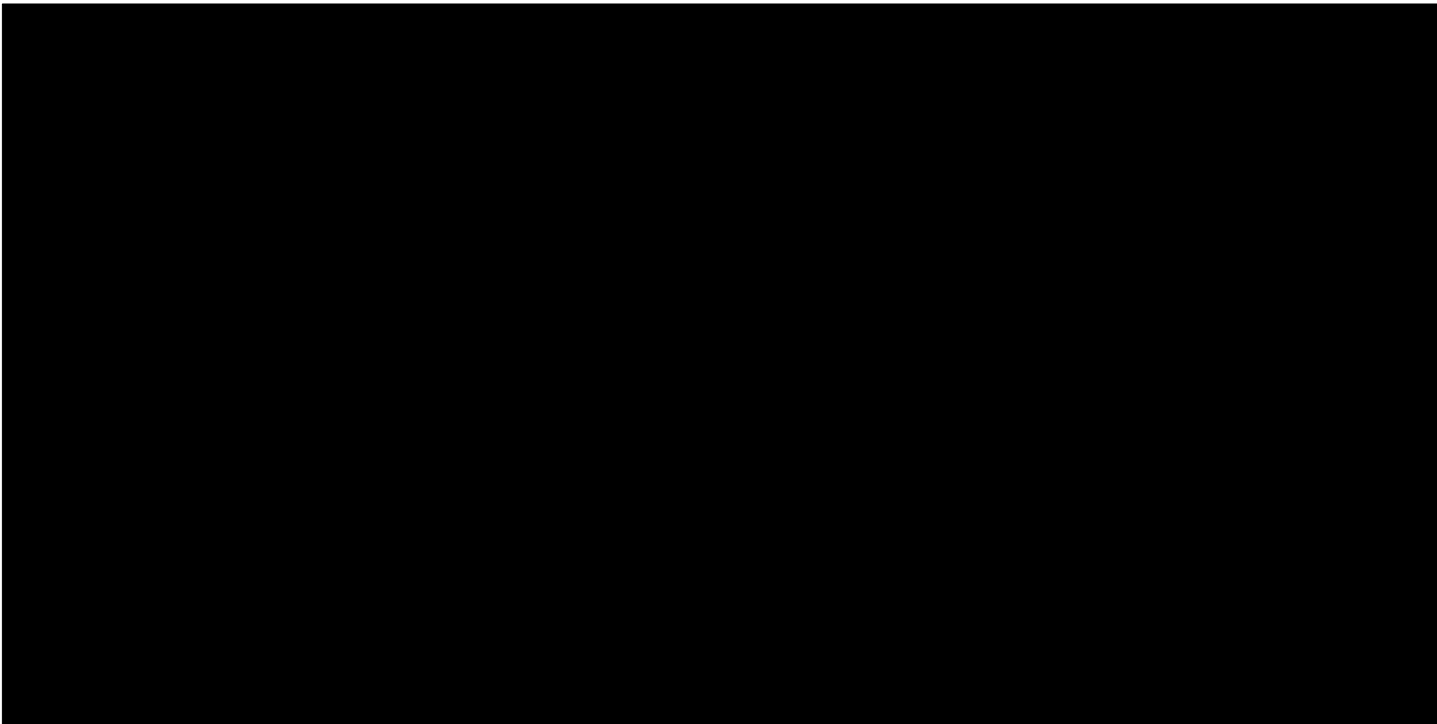
3. Proposed idea or technology

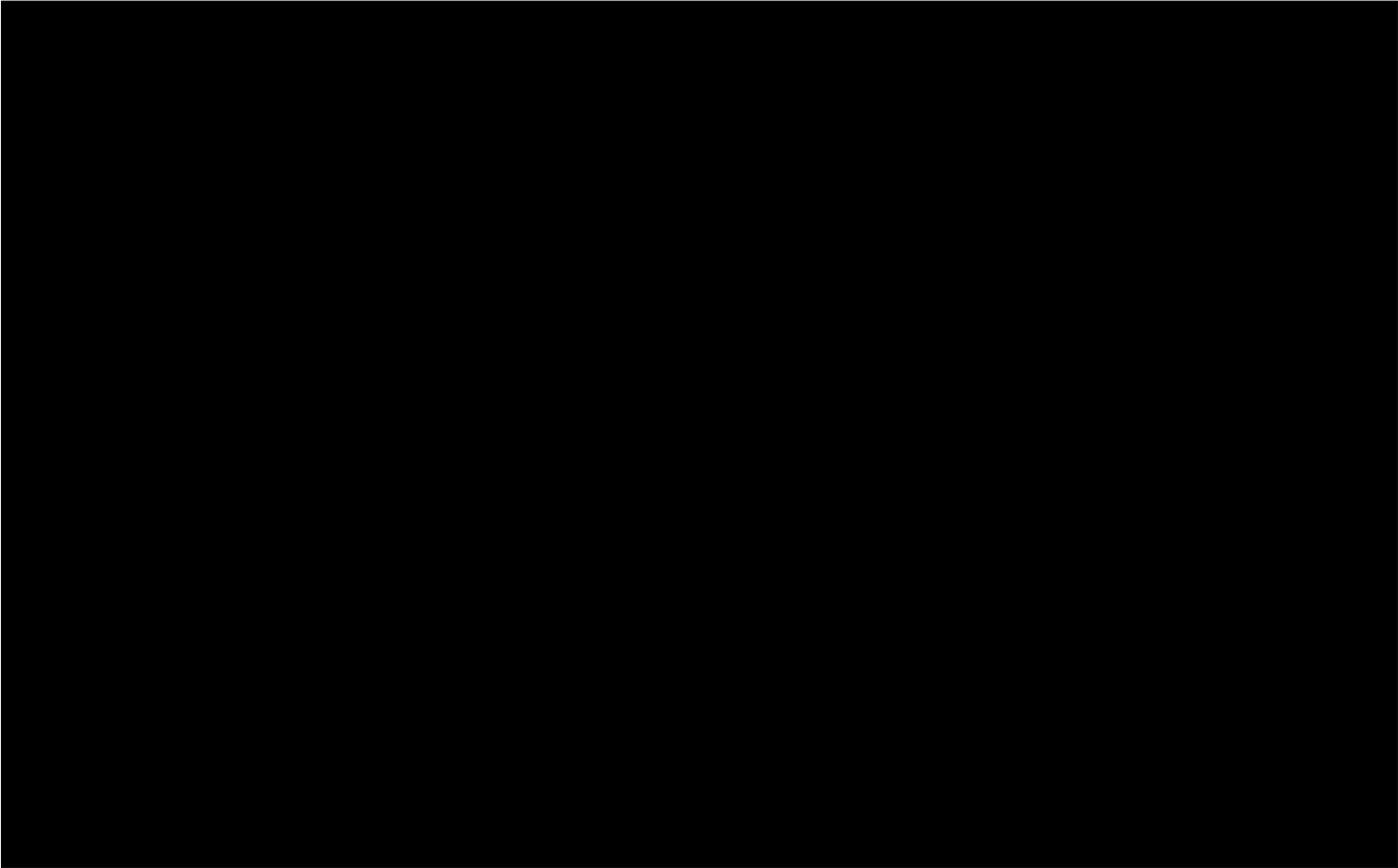
Proposed idea or technology

Technology Solution



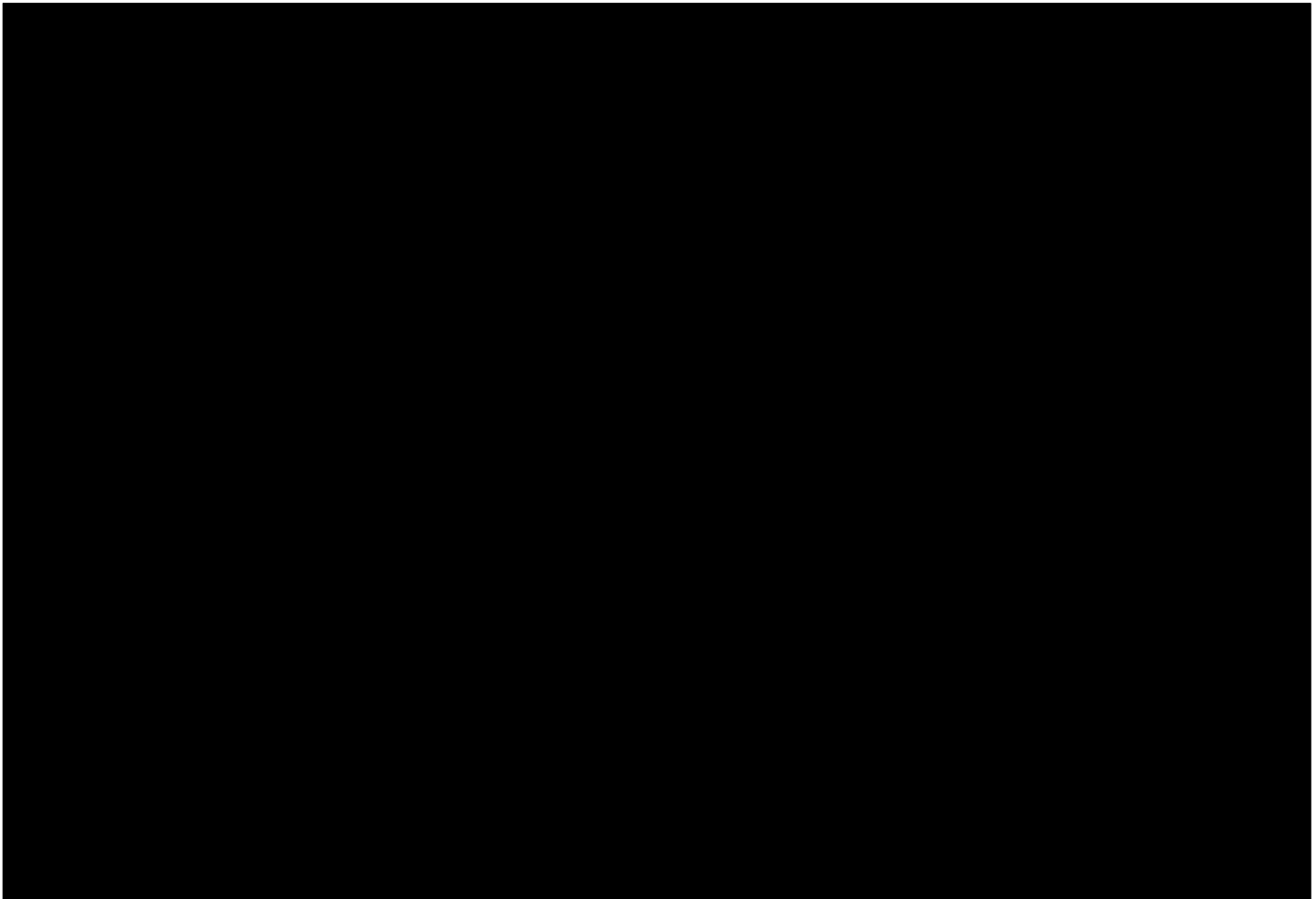
Scalability and readiness

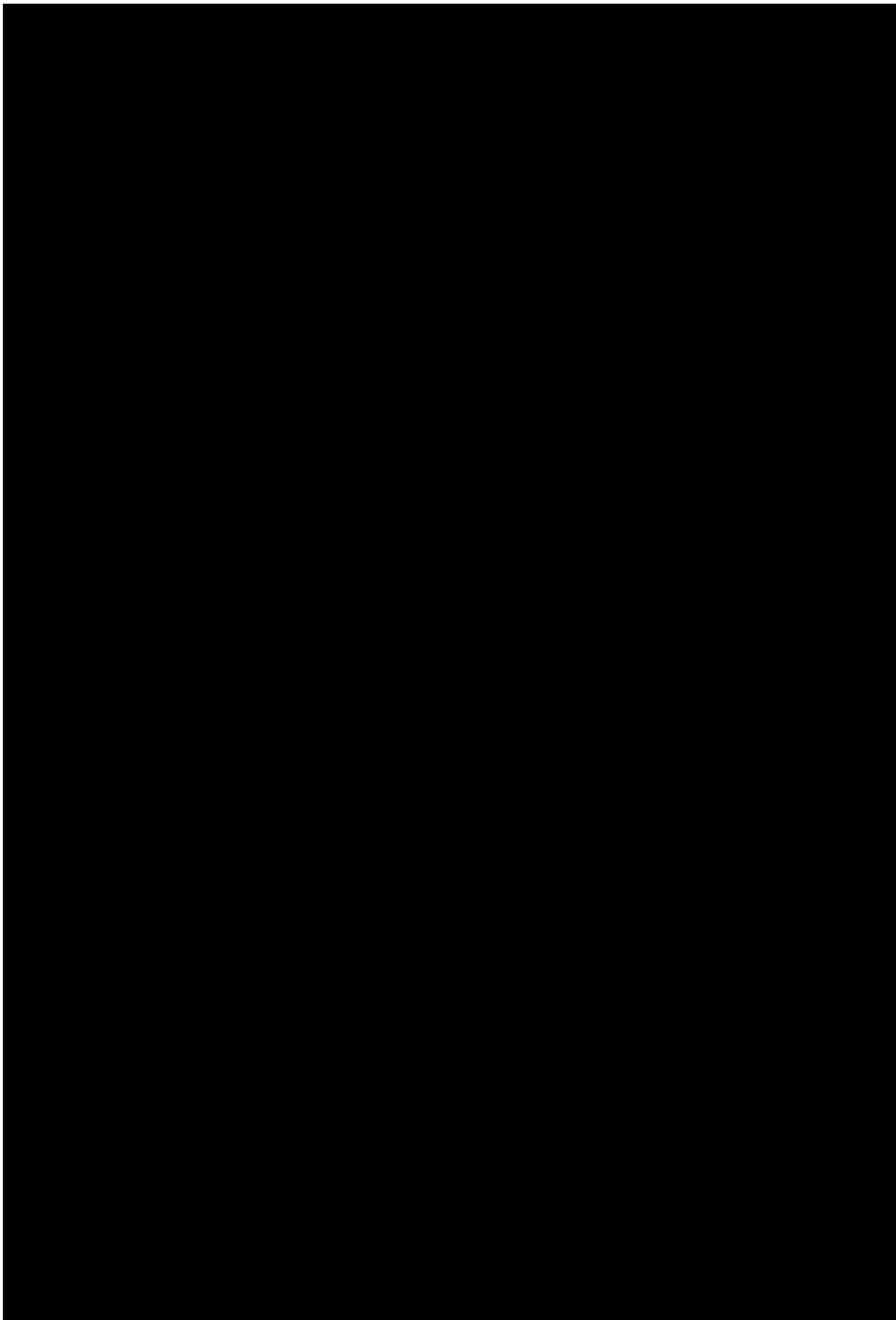




4. Technical project summary

Technical project summary





5. Current state of the art and intellectual property

Current state of the art and intellectual property

Financial services companies rely today on a "boots on the ground" approach to valuations and audits of land use; a set of processes that's inefficient, costly, requires the engagement of peripatetic surveyors and needs repeated updating and re-validation. Without this information risk decisions cannot be taken: it underpins the credit and insurance underwriting of FLMs.

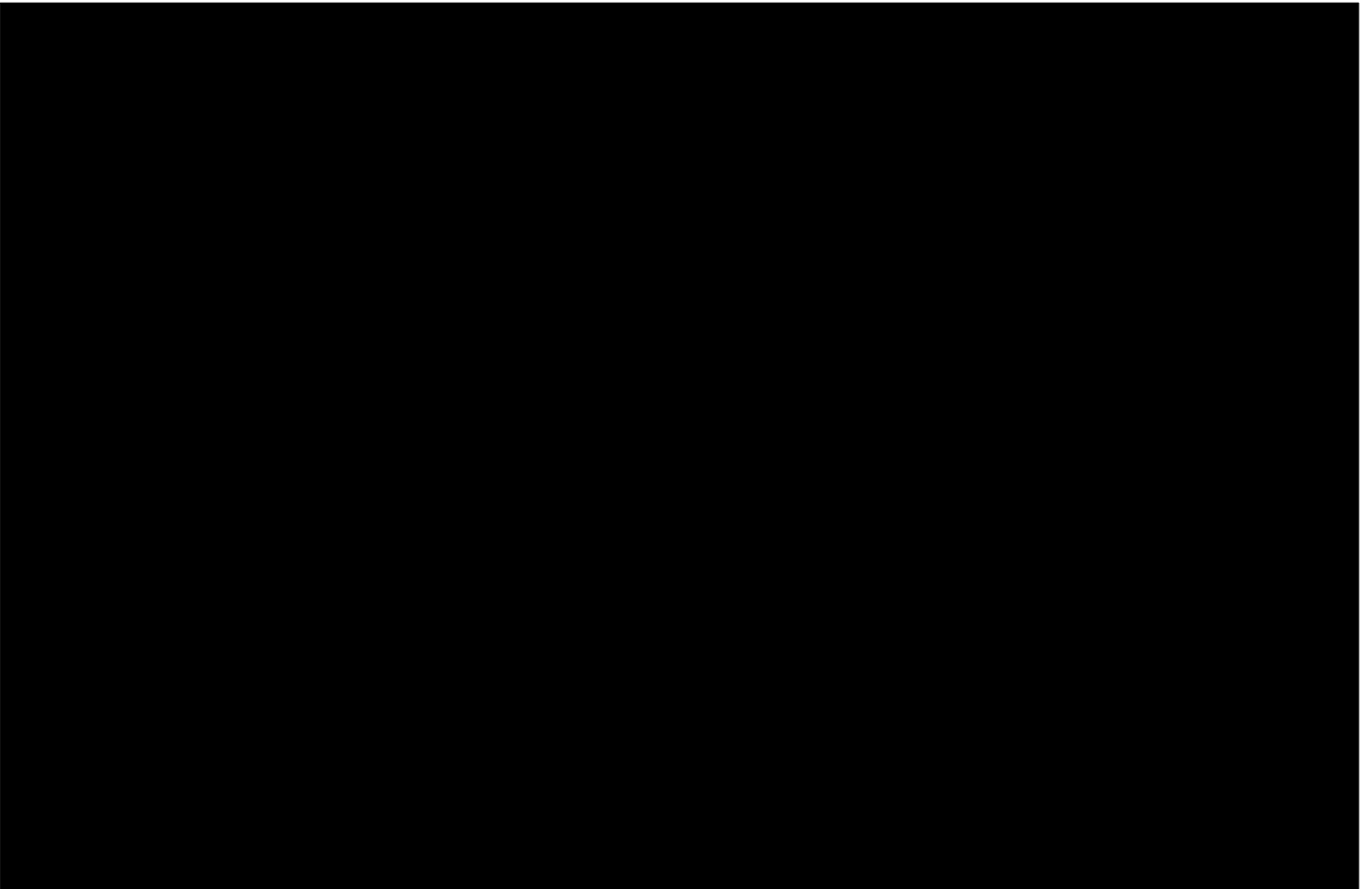
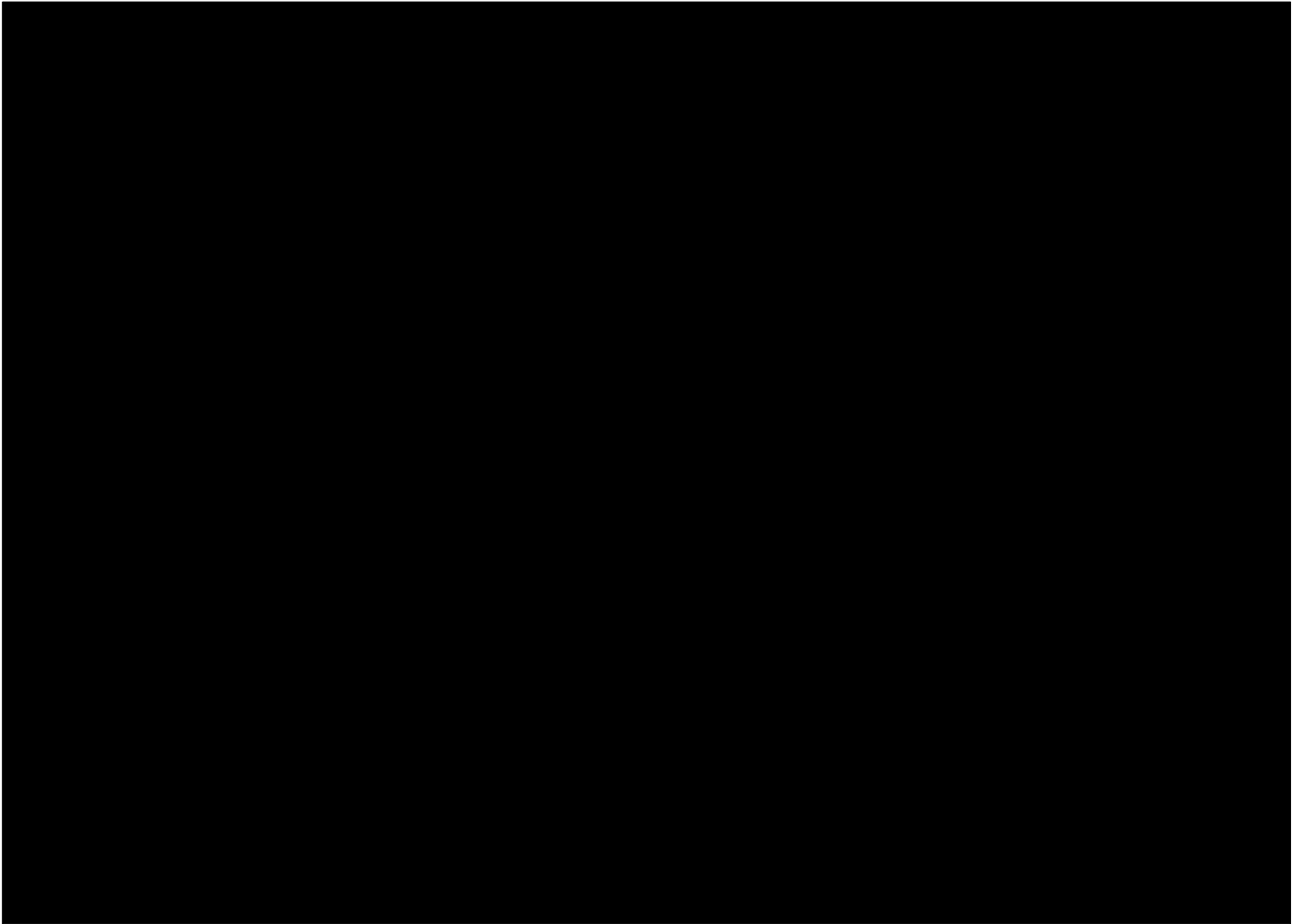
Valuations are provided by qualified surveyors, who charge £1000s for manual measurements, subjective opinion (albeit based on years' experience of the existing regimes) and report writing. These valuation reports form an underpinning to financial decisions for banks and insurers but offer very limited data integration for risk systems. Furthermore, the recent changes to subsidy regimes render the years' experience of previous regimes redundant.

Manual carbon audits are starting to be piloted, with FSCs beginning to consider how the results inform their calculations and projections of Scope 3 financed emissions at a customer and portfolio level. This is subject to a high degree of estimation currently.

The methodology underpinning this application removes subjectivity, applies novel environmental science, and digitises manual process in relation to:

- accurate tree counts and timber volumes, habitat analysis and peatland condition
- monetisation potential from carbon and Natural Capital

- site specific risk analysis





6. Project plan and methodology

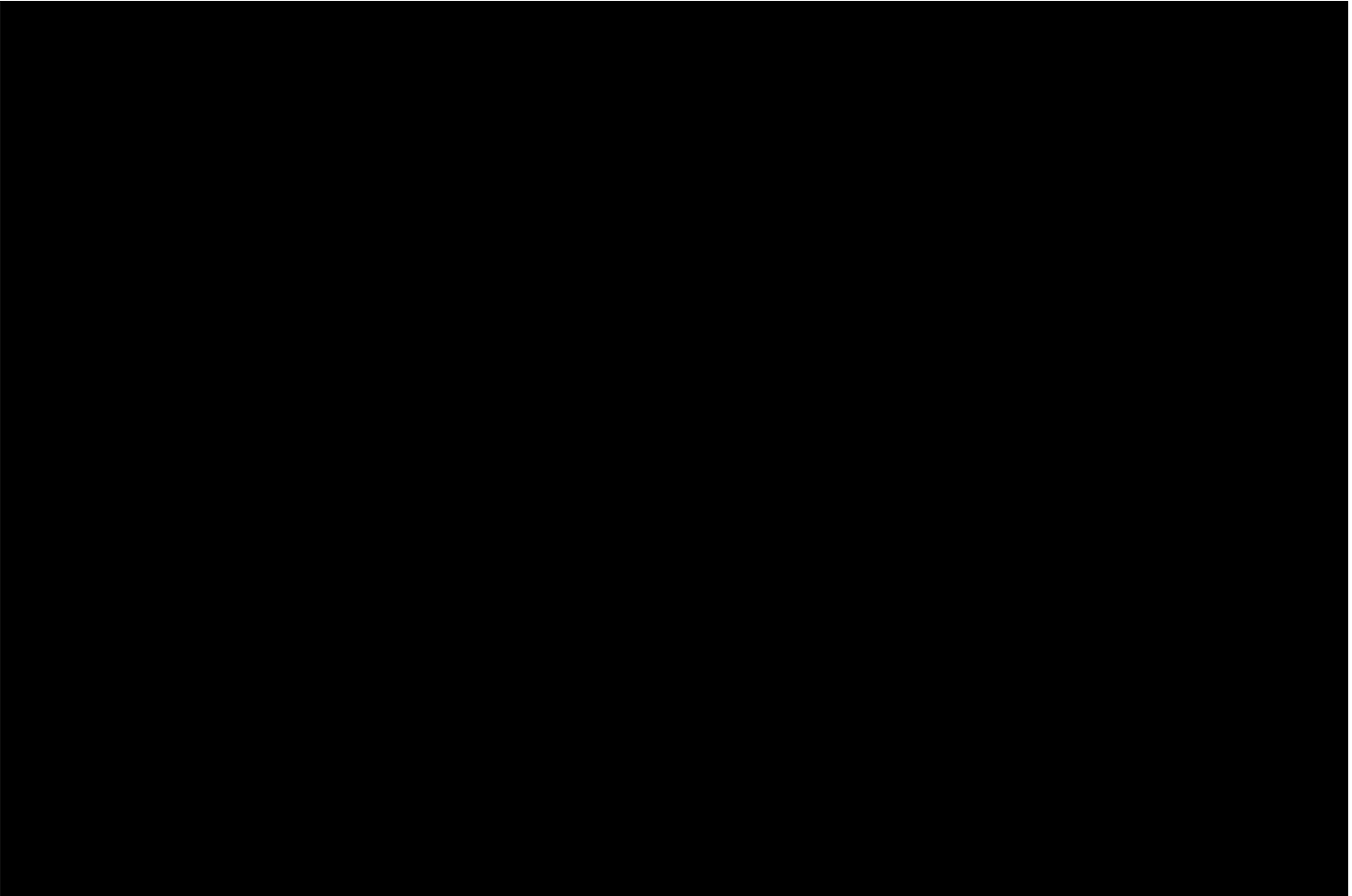


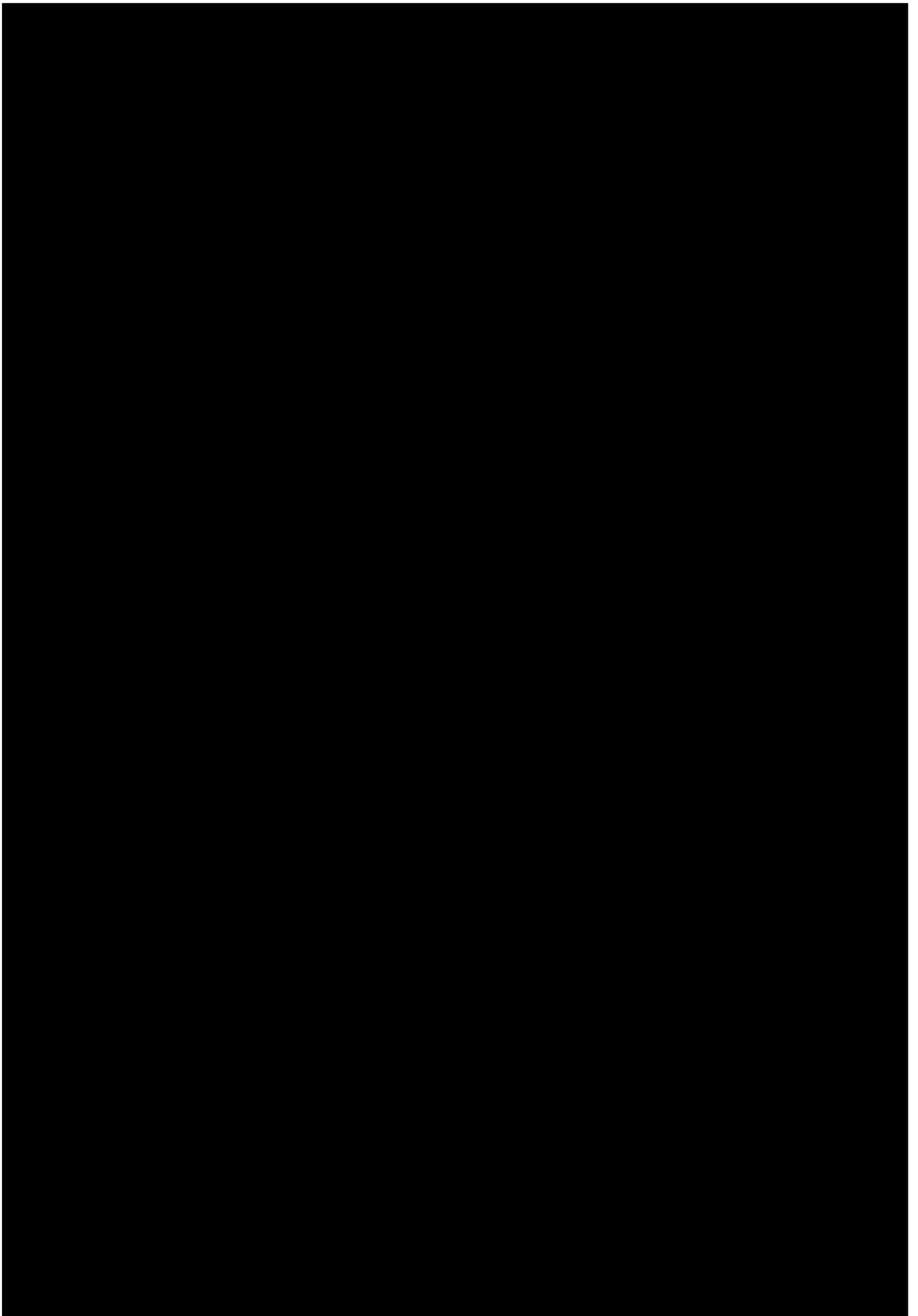
Project plan and methodology

The project plan focuses on the work required to turn the outputs of the existing scientific research programs and technical developments to date into relevant and accessible data for financial services risk analytics. The plan also covers the development of commercial terms to enable FSCs to access this data, whilst protecting CSX's Intellectual Property.

The success of this project would be a clear mandate from the Financial Services sector that the proposed technology solution is suitable for their needs, and confirmation that the technology can be integrated into their digital platforms.

The project will be delivered in work packages (WP) and milestones (M) through which CSX will track progress and identify delays as early as possible. Perigon will act as a sub-contractor to CSX.





7. Technical team and expertise


Technical team and expertise

CSX and Perigon are well positioned to deliver the proposed solution.

Climate Solutions Exchange Ltd (CSX) has developed a process of data collection and analysis through remote sensing technology to deliver accurate measurement of above ground biomass and habitat analysis. The company is engaged in world leading scientific research and employs technologists and data scientists to interpret the data necessary to inform natural capital quantification.

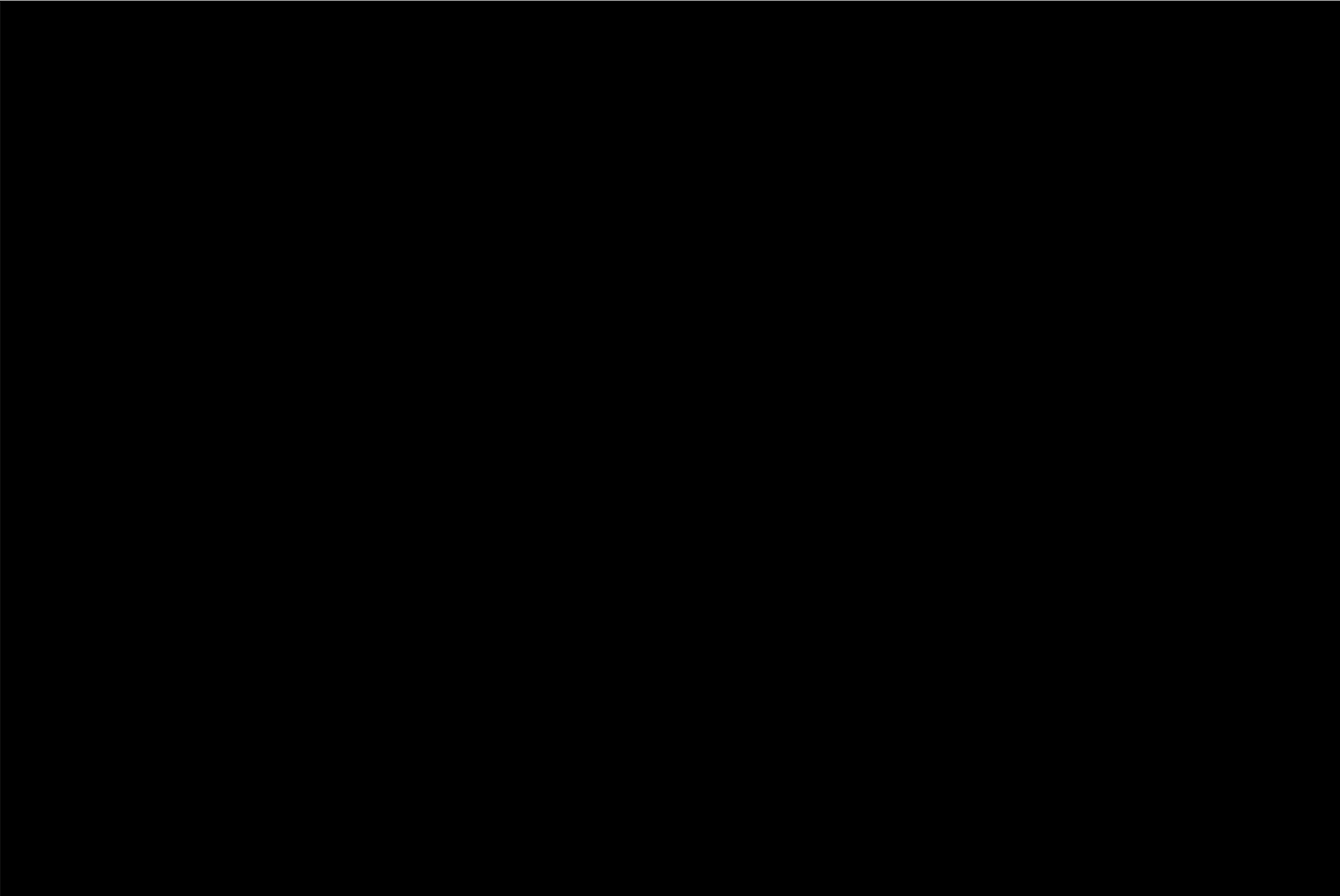
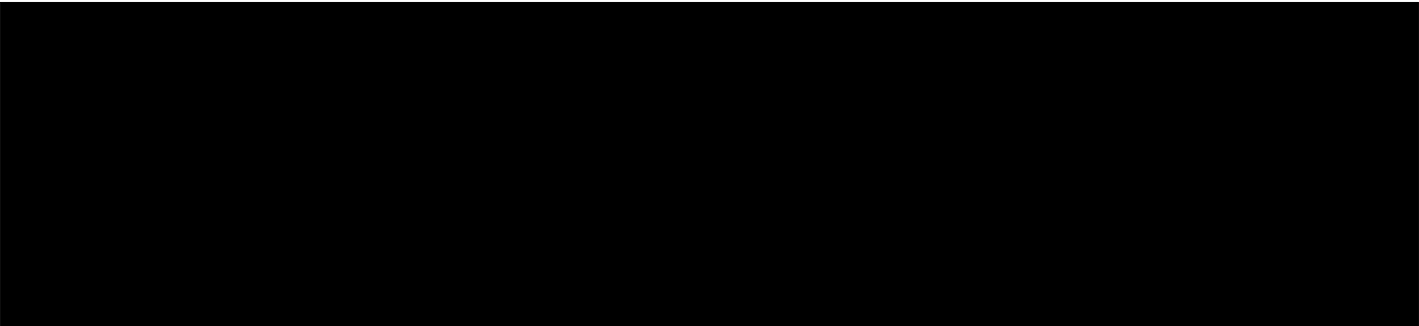
Andy Howard, CEO leads the CSX team, developing new technology solutions to inform land management decisions, providing the link to blended / carbon finance facilitating Nature Based Solutions.

Edward Milbank, Director has extensive experience in the management of agricultural land and forestry. Edward is involved in 3 DEFRA ELMS Test and Trials and is currently engaged with Natural England trialling Biodiversity Net Gain.



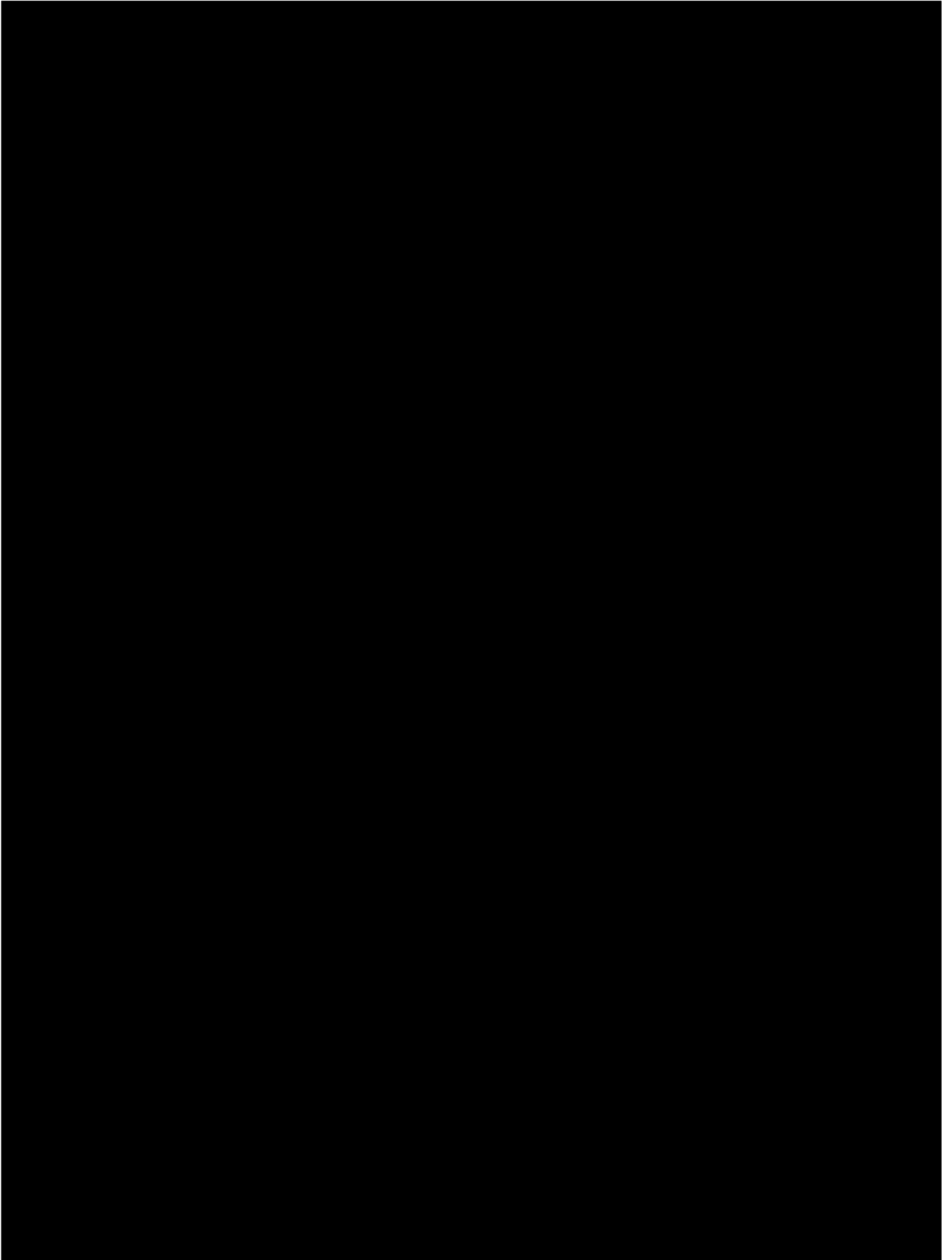
Perigon Partners is a Management Consultancy business focused on helping financial services businesses, define, implement and communicate sustainable strategies, bringing ESG to the centre of strategic dialogue and goals. Perigon addresses the growing requirement for business leaders to incorporate ESG considerations in developing their commercial strategies and managing stakeholders.

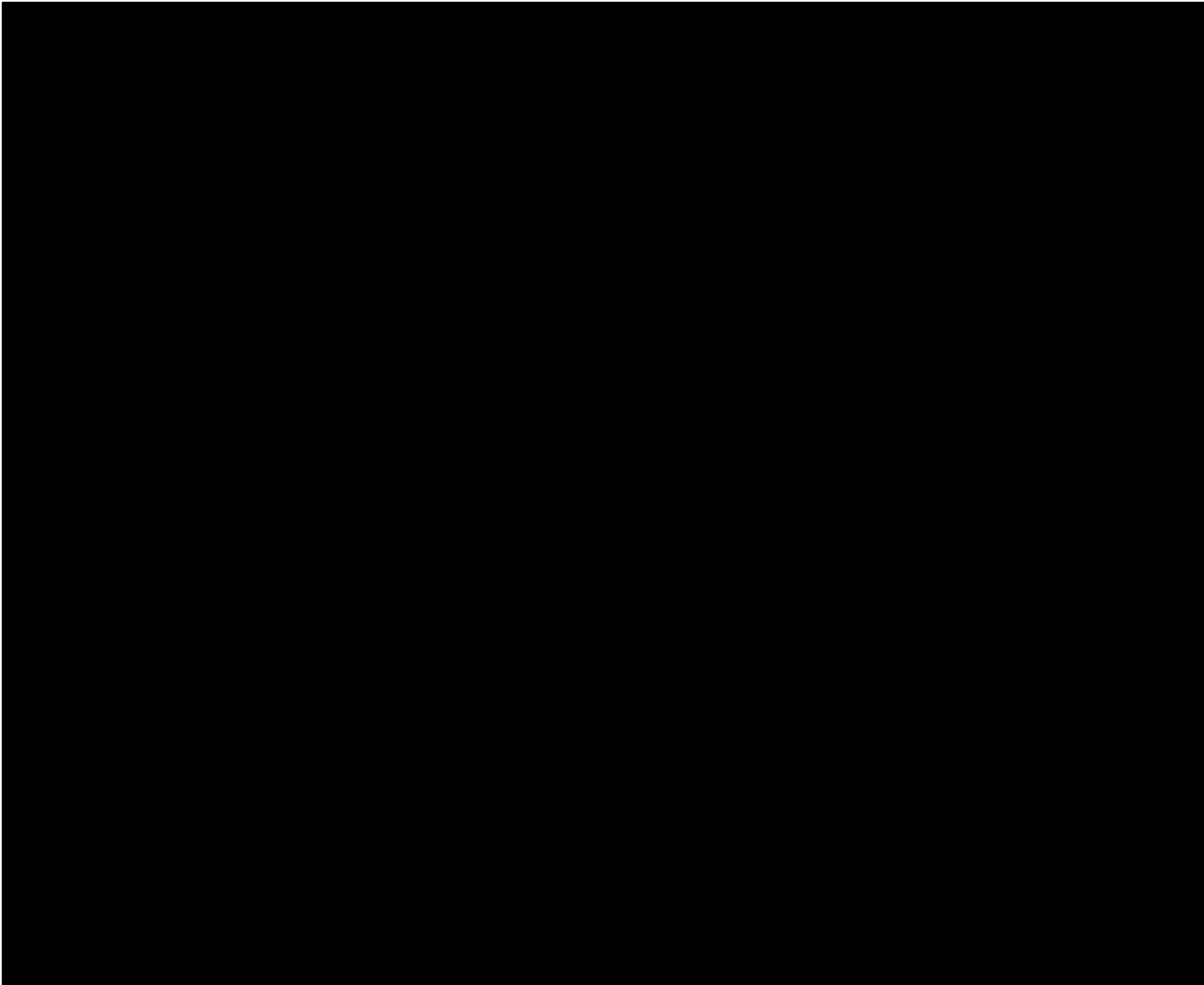
The founders have 25+ years' combined experience in FS strategy with significant focus in last 5 years on ESG. Perigon is currently working with a range of FS firms on different ESG-related challenges and opportunities.



8. Costs and value for money

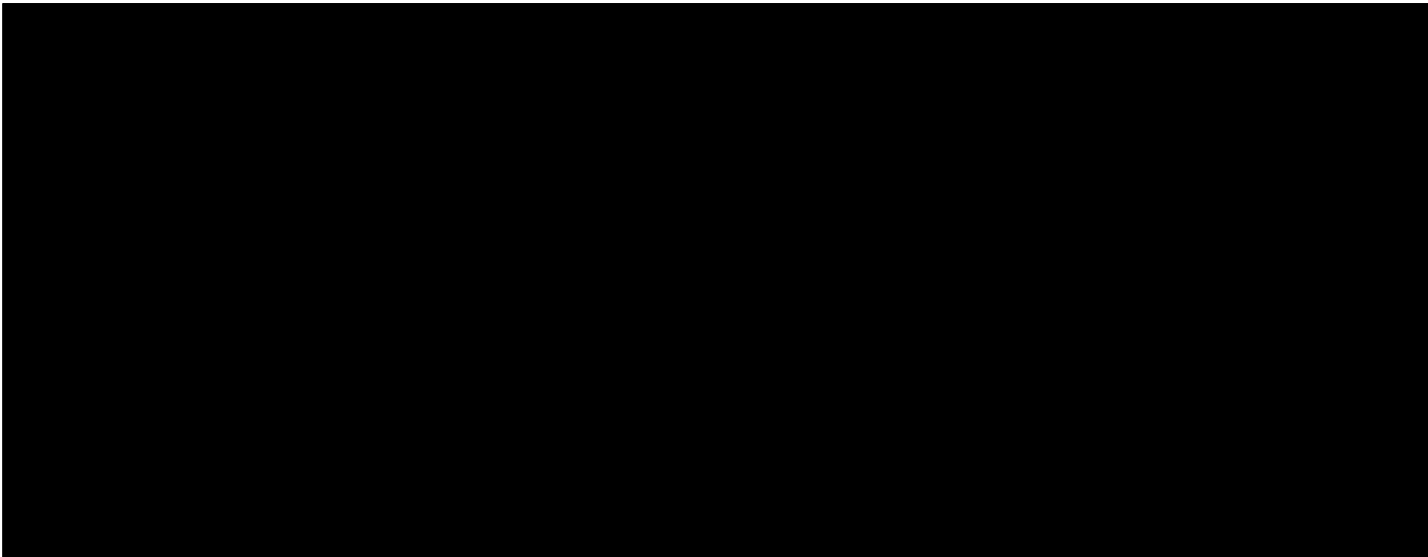
Costs and value for money

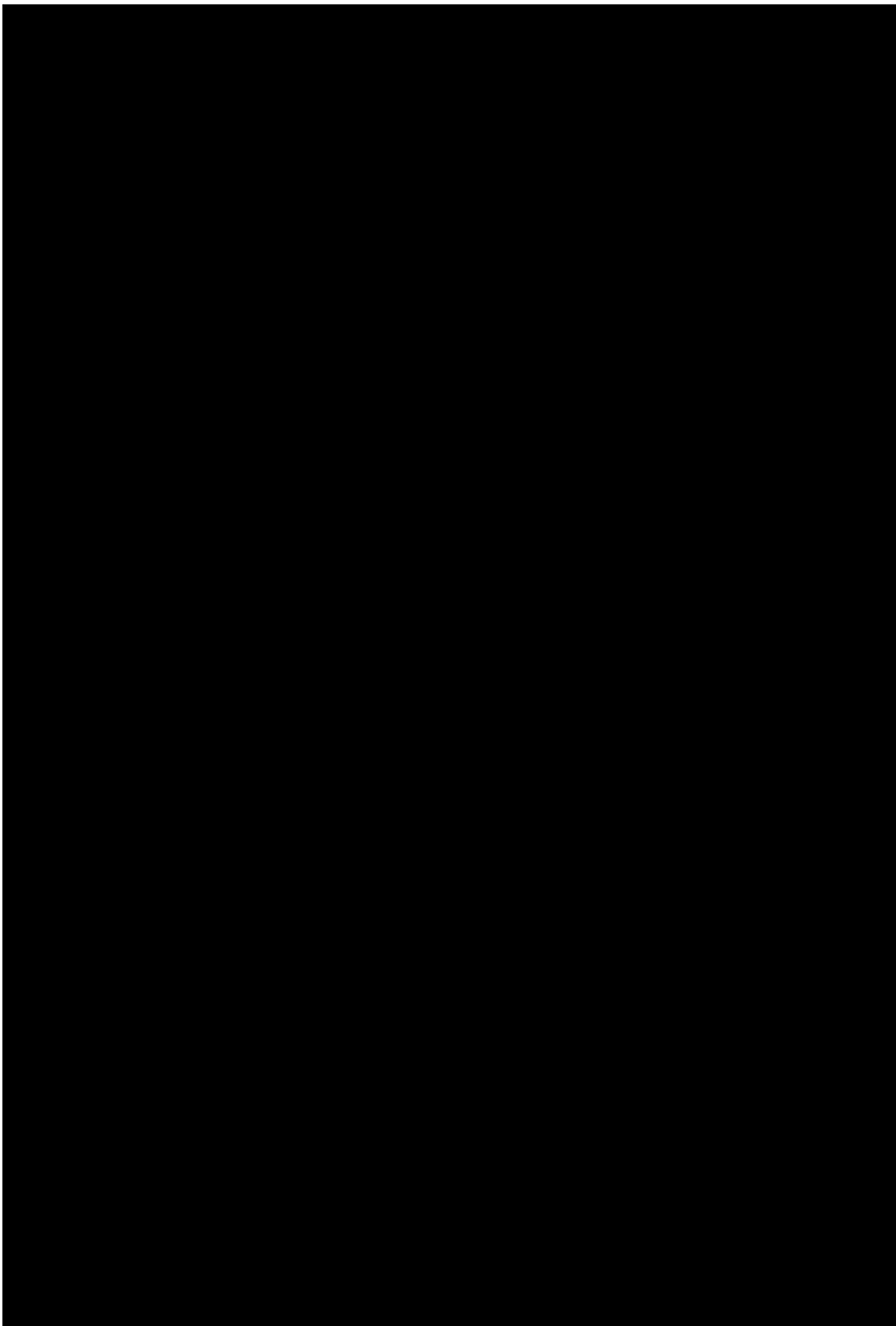


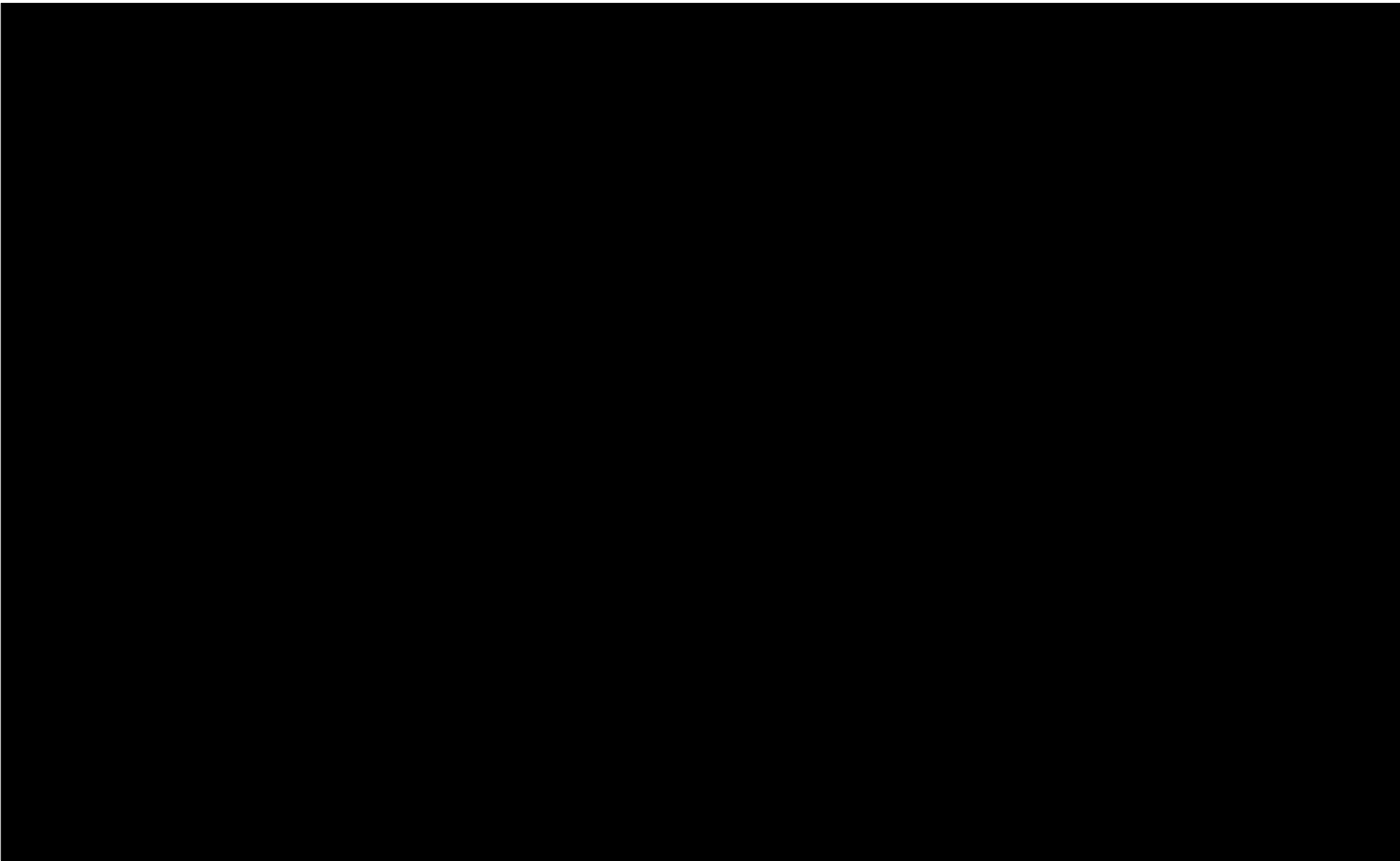


9. Commercial potential

Commercial potential

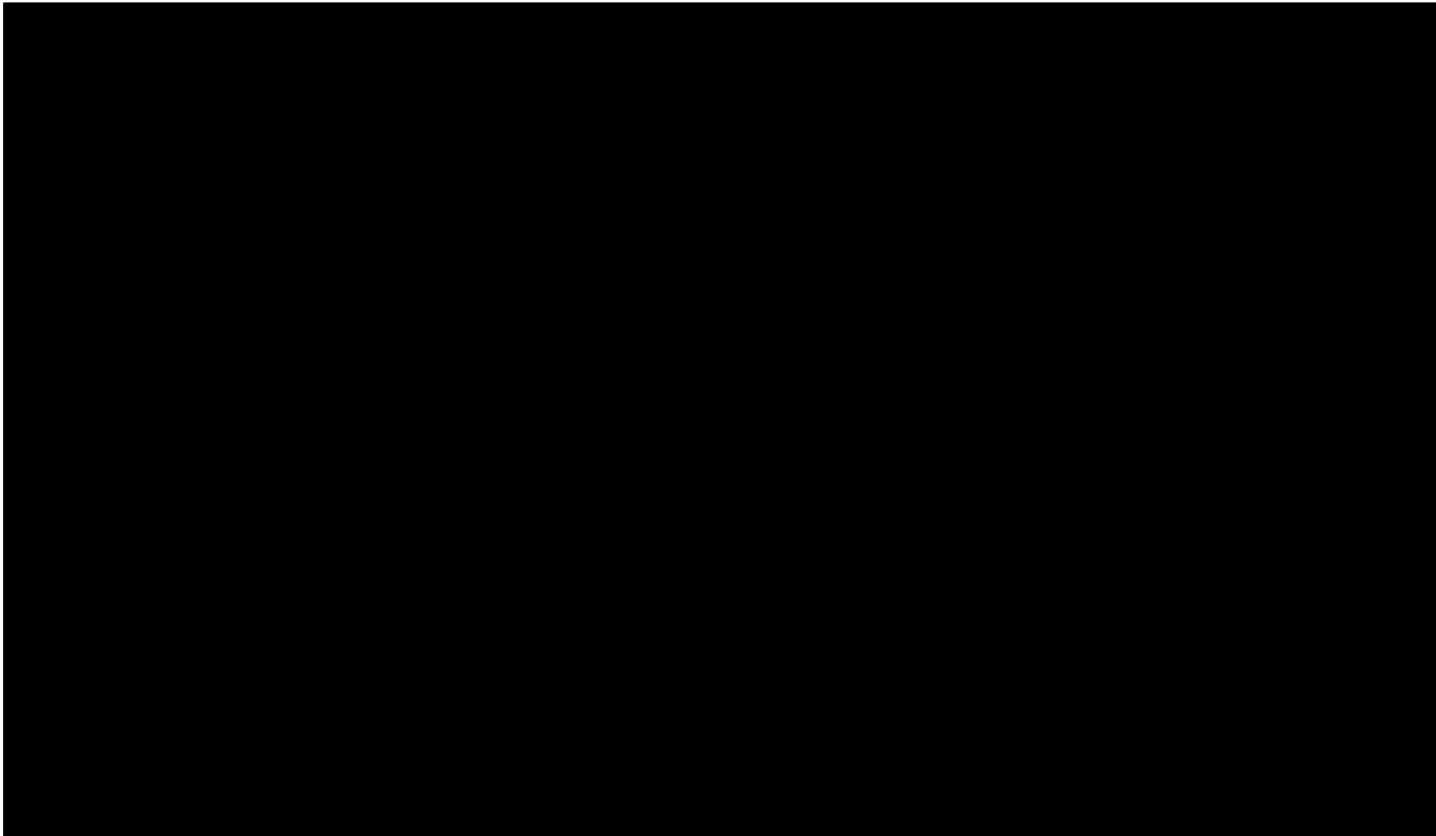






Project cost breakdown

CLIMATE SOLUTIONS EXCHANGE LIMITED	£47,586
Organisation	



Totals	£47,586
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Payment milestones

Month	Milestone	% of project costs	Payment request
Total payment requested		100.00%	£47,586

Terms and conditions

Award terms and conditions

Partner	Terms and conditions
CLIMATE SOLUTIONS EXCHANGE LIMITED (Lead)	

Assessor feedback

