
PERSEUS

2025 Report

Unlocking sustainable finance
with assurable smart data

Document: IB1-PERSEUS-2025-REPORT
Version: v2026-01-29



ib1.org/perseus

The Net Zero Council welcomes innovative programmes such as Perseus that help simplify and automate emissions reporting and unlock access to finance for SMEs

UK Net Zero Council

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Document title: IB1 Perseus 2025 Report

Document code: IB1-PERSEUS-2025-REPORT

URL: <http://ib1.org/perseus>

Version: v2026-01-29

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2026-01-29, IB1 Perseus 2025 Report, <http://ib1.org/perseus>

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Audiences

This report details Perseus, its vision, mission, values, and practical use cases. Information on specific elements, legal and policy considerations, and technical information are summarised, supported by linked detailed reports.

Its primary audience are financial and sustainability decision-makers, and their advisors, who wish to understand how to **implement** change, using multi-sector collaboration and a joined-up, systemic approach to de-risk sustainable finance investment.

This includes, but is not limited to, banks and financial service providers, commercial practitioners, carbon reporting solutions, policy makers, regulators and trade associations working on sustainable finance, corporate reporting, and supporting SMEs.

Many of the principles and lessons herein are applicable beyond the scope described and the initiative aims to expand based on market adoption and market needs.



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2025 Vision, Mission

Vision	Perseus will help unlock access to finance that reduces emissions, by automating sustainability reporting for every SME business in the UK.
Mission	In its first phase, Perseus will automate access to assurable SME electricity data. SMEs will be able to see the emissions from this energy use and share it, via reporting solutions, to their banks to unlock green finance.

Guiding Principles

Go far together	To arrive at a comprehensive, comparable solution that is trusted in the market, requires many stakeholders to collaborate, align and agree.
Do one thing well	While the first phase of Perseus is to automate access to assurable electricity data, it will expand on this once the basic framework has been both proven and adopted.

Members

Steering Group	    
	      
Observers	      
	       
Co-founding champion 	
v2025-10-01 PERSEUS STEERING GROUP ib1.org	
Financial Service Providers (FSPs)	
       	
Carbon Accounting Providers (CAPs)	
                   	
Energy Data Providers (EDPs) & energy sector ecosystem	
    	
Ecosystem partners & sponsors	
      	
v2026-01-29 PERSEUS COMMERCIAL MEMBERS ib1.org	

Executive Summary

Perseus made huge progress in 2025. It can now support financial incentives that meet Small and Medium Enterprise (SME) needs where they are, and how they wish to invest: whether they are funding net zero, energy efficiencies, or transition planning.

This evolution enables banks and lenders to reward SMEs whether they are funding via cash flow, loans, credit or other incentives. To help stimulate economic growth, Perseus-enabled incentives can radically reduce reporting costs, unlocking the deployment of capital for energy efficiency, decreasing carbon intensity, and stimulating new financial innovation.

It unlocks assurable smart data to flow at scale, automating reporting in a manner that de-risks SME financing for financial service providers. This enables comparable, personalised and credible insights to 'go to where the customer is' by embedding directly into mainstream accounting systems, carbon management and analysis tools, and financial products and services.

As a national programme, Perseus provides the data plumbing for impact, with trusted governance and oversight. It helps embed sustainability into the financial system rather than treating 'green' as an edge-case. As a market-led, pragmatic, low-cost and low-friction approach, Perseus stimulates a sustainable future.



"As a leading smart data initiative, Perseus is developing guardrails for assurable data to support finance and supply chain decisions towards a sustainable economy."

Hannah Gilbert, Director of Sustainability, British Business Bank

Expanding from 'financing green' to embedded sustainable finance

Members have led the evolution of Perseus from financing green (supporting individual sustainable projects) to sustainable finance (embedding trusted emissions data directly into accounting). This is an **ambitious, market-wide transformation** of the financial system. This is especially relevant given that 60% of SME lending now comes from sources other than the main high street banks².



"Lloyds is working with Perseus to develop and automate common data sharing standards for sustainability reporting. This will help us deliver assurable data, improving risk management and supporting better products and services for our SME customers, to build both economic and environmental resilience."

Neil Oliver, Deputy Head of Environmental Sustainability, Portfolio Analytics, Commercial Banking at Lloyds Banking Group

² <https://www.ukfinance.org.uk/news-and-insight/press-release/gross-lending-smes-in-2024>

Perseus 2025 outcomes

1. Scope expansion

- Expanding the total addressable market from 'financing green' to embedded 'sustainable finance', and enable Perseus to be applied to the whole SME market: including debt financing, debit, credit and savings accounts
- Engaging with both commercial real estate (e.g. sublet offices) and national smart meter roll out energy data sources for both electricity and gas
- Extending energy coverage from electricity (Scope 2) to include gas (Scope 1) which covers an estimated 70% of market use cases
- Initiating Project Orion³ to support the harmonisation of SME net zero reporting across applications (e.g. ratings, supply chains) using Perseus as its foundation



"Perseus' work to improve data infrastructure and automate emissions reporting has the potential to make sustainable finance more accessible to SMEs by providing them with high-quality data on their business, all whilst easing their data-processing workload. Perseus aims to help SMEs unlock the benefits that emissions tracking can bring to business, and we look forward to seeing the impact that Perseus' work may have."

Dana Clouston, Head of Sustainable Finance & Lending Optimisation, Barclays Business Bank

2. Industry engagement

- Validating core user needs across SMEs, banks, application vendors, and energy data providers
- Exploring implementations with Sage, Quantaco, Tese, VoltView, Lloyds, and Barclays. Continue to advance integration with energy data providers Perse, Demand Logic and Smart DCC. (e.g. Sage Earth is rolling out to hundreds of thousands of UK SMEs with a Perseus-enabled product)
- Demonstrating alignment of the Perseus voluntary Scheme with the UK Data (Use and Access) Act 2025 as a flagship cross-sector Smart Data initiative
- Collaborating with XBRL on embedding in reporting, making Perseus 'plug and play' for regulators, accountants and other financial systems
- Collaborating to begin laying the groundwork for interoperable trust and assured data flow between Open Banking and Perseus



"Perseus helps small businesses cut costs and emissions, reduce reporting and bureaucratic burdens, and compete more effectively."

Zarina Banu, Global Head of PR & Communications, Tide

³ <http://ib1.org/orion>

3. Technical and operational solution implementation

- Deploying a full sandbox (equivalent to production) for use by Carbon Accounting Providers (CAPs) and Energy Data Providers (EDPs) to develop against and demonstrate they are Perseus-ready (i.e. able to secure permission, retrieve SME energy data from a synthetic energy data provider, process it into emissions and generate a signed report)
- Implementing support for reporting in the standard XBRL format, foundations to make Perseus 'plug and play' for regulators, accountants and financial systems

Perseus will begin to roll out to SMEs in 2026, as scheduled. The go-to-market will be led by members, with communications supported by the Steering Group, and programme-specific activities operated by Icebreaker One (IB1) for and on behalf of members.



"Perseus makes it easier for everyone to do their carbon calculations properly, and comfortably moves us years ahead of the most stringent proposed updates to the GHG Protocol. This is exactly why Sage intends to roll out a Perseus enabled product to make reporting easier for hundreds of thousands of UK SMEs."

George Sandilands, Vice President, Sage Earth

With Perseus now ready as a voluntary Smart Data Scheme, and operated under an open source⁴ 'Scheme-as-a-service' model, there is a significant opportunity to:

1. Broaden applicability across SME financing not just 'green loans'
2. Open up innovation in products and market incentives (e.g.corporate tax relief)
3. Increase the number of members (financial services, application vendors, data providers)
4. Broaden the scope to include water and other categories as needed to support financial incentives
5. Explore broadening the initiative to corporates and/or consumers

Stakeholder engagement will continue, along with membership renewal and expansion. This will fund the ongoing Scheme co-development, the delivery of use cases and case studies, communications, legal and policy and engagement. This includes the operation of trust services to deliver the Scheme in the market.

After two years of intensive development, with hundreds of stakeholders engaged, Perseus is now gearing for scale to help embed sustainability into our financial economy, as a pioneering cross-sector Smart Data scheme.

To join, see ib1.org/join/perseus or email partners@ib1.org.

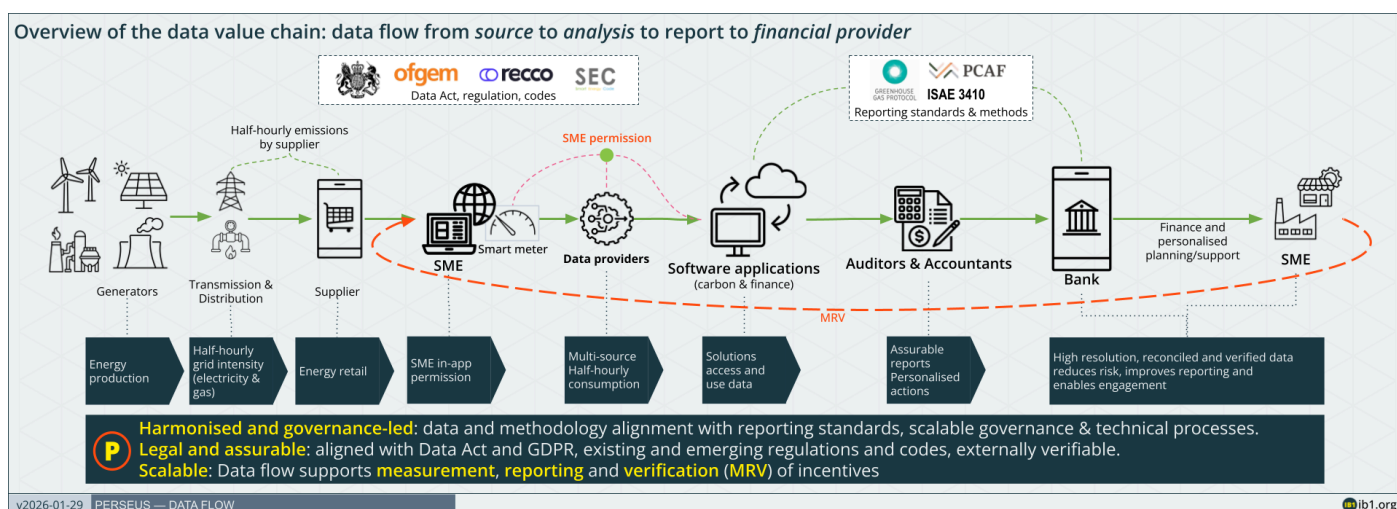
⁴ <https://ib1.org/ip>

1. The purpose of Perseus

Perseus has evolved to a position where it can apply to a broad range of use cases, and is adapting to a rapidly changing landscape of financial products and a complex geopolitical landscape. To address both these challenges, Perseus is now best framed as a Sustainable Finance⁵ initiative.

The purpose of Perseus is to unlock financial incentives for SMEs using trusted, permission-based data infrastructure that can embed sustainability at scale. It enables SMEs to securely share assurable energy and emissions data, with a *clearly defined purpose*, so that banks, lenders, and service providers can offer credible, low-friction financial incentives that support decarbonisation, energy efficiency, and business transition.

In establishing a common legal, technical, and governance framework aligned with the UK Data (Use and Access) Act, Perseus removes the cost, risk, and fragmentation that currently limits green finance. Its role is not to create new standards or to sell data, but to make sustainability data reliable, harmonised, interoperable, and usable across the market: supporting better financial decision-making, building regulatory confidence, and enabling the shift from 'green' as a niche product to sustainable finance as a core part of the economy.



Schematic 1: overview of the Perseus data flow (IB1, 2026)

Perseus enables data to flow between organisations that can provide insights, analysis and products that support their customers, where the end customer is already, while preserving their data rights and affording them control. It does not centralise the data.

Assurable data enables banks to offer incentives to lending products (e.g. sustainability-linked loans, transition finance), and opens up potential to offer beneficial incentives on business savings.

UK 'green lending' is anecdotally estimated to be around £1 billion per year. With automated, assurable and personalised analytics, available 'at the point of sale', the potential is to grow SME impact (which represents ~50% of UK business emissions) into a ~£5-10B opportunity between 2026 and 2030.

⁵ https://finance.ec.europa.eu/sustainable-finance/overview-sustainable-finance_en

2. Unlocking economic impact

The impact for the UK isn't just carbon, it's economic: impacting capex, efficiency, productivity, and competitiveness.

2.1. Stimulating a potential £5-10B marketplace (2026-2030)

The combination of consumption data being made available to the market at scale, with the legislative basis to empower SMEs, with the collaborative power of the Perseus members represents a new opportunity to tackle decades-old challenges. Material differences include:

- The availability of reliable emissions data (e.g. electricity, gas, smart meter)
- The materiality of the intervention (does it reduce costs and emissions?)
- The presence of a mechanism to assure and track performance (Perseus)

The European Commission defines sustainable finance as finance that supports economic growth while reducing pressures on the environment, taking into account social and governance aspects. It includes climate finance, green finance (and social impact finance), and aims to create quantifiable financial incentives, promote transparency and long-term investment in sustainable economic activities.

2.2. Assessing the TAM, SAM, and SOM of Perseus

Digital reach

Perseus brings together radically different sectors: energy data from the energy system, accounting data from software providers, and finance from financial service providers. It is therefore important to determine their *combined* reach, with the goal to increase the qualified, upstream pipeline for FSPs and unlock SME access to financial incentives.

CAPs enable SME financial managers (e.g. accountants, business owners) to assess their environmental impact using data from EDPs, and match these with personalised interventions and FSP financial incentives. Perseus members include major accounting providers like Sage and Intuit as well as dozens of specialist carbon accounting providers. Collectively, their UK reach is estimated to exceed 1 million SMEs.

Smart meter uptake is higher in energy-intensive sectors (e.g. manufacturing, hospitality, retail with refrigeration, warehousing, construction). These sectors are typically higher emitters in Scope 1 and 2 emissions (direct fuel use and electricity). The Perseus ecosystem includes Smart DCC and EDPs (e.g. Perse, n3rgy, VoltView), covering over 700k businesses today.

In commercial real estate (CRE), such as multi-tenant office buildings, retail centres, and industrial estates, EDP members (e.g. Demand Logic) can enable access energy data through integration with third-party asset systems (e.g. building management systems or BMS). These systems enable direct or virtual metering to provide detailed performance data, even when tenants do not control the utility account or smart meter directly. This extends the potential addressable market by up to 700,000 additional SMEs, and creates new opportunities to engage upstream actors such as asset managers and facilities management companies.

Together, these channels support permission-based engagement with over 1.5 million SMEs, unlocking large-scale adoption of sustainable finance with verifiable climate impact, by 2030.

Of the 5.5M SMEs in the UK, approximately 4 million are 'non employers'⁶ (e.g. sole traders), many of whom operate from domestic premises. These could be brought into scope through a consumer-focussed extension of Perseus (e.g. SmartDCC enables access to over 20M domestic Smart Meters). Combined, the potential Perseus-addressable reach is estimated at >70% of market-relevant SMEs.

Financial impact

The total stock of SME lending in the UK is £62.1B with £16B (~45k loans) per annum in new lending, representing the total addressable market (TAM). At 10-15% in sustainable finance over the period 2026-2030, a £6.4B-£9.6B service addressable market (SAM) via emissions-linked mechanisms is feasible. If CAPs roll out to 500,000 SMEs and achieve a 10% conversion rate to active interest (i.e. perform a calculation and profile the opportunity), a new top-of-funnel potential exists in the order of 50k. Assuming a 10% conversion rate from interest to sale, would yield 5k loans (aligned with the SAM model).

Figures are estimated based on member interviews and cross-analysis of market statistics. They are reported as directionally credible, reflecting expected reductions in cost and friction, increased (incentivised) demand for sustainable finance, and alignment with transition planning

As such, Perseus could stimulate a £5B-10B addressable marketplace for sustainable finance, funding the creation of jobs, and unlocking energy efficiency and decarbonisation.

The Perseus-enabled market includes:

- Green loans (use-of-proceeds for environmental projects)
- Sustainability-linked loans (financial terms linked to ESG performance)
- ESG-integrated lending and investment (screening and risk analysis)
- Transition finance (supporting high-carbon sectors in credible decarbonisation)

Examples include, but are not limited to,

Type of Lending	Perseus applies if
Term Loans	Borrower emissions can be measured and linked to risk/performance
Working Capital Loans	Emissions-linked pricing or SLL-style margin triggers can be applied
Retrofit Loans	Finance funds verifiable energy or carbon-saving interventions
Equipment Leasing	Asset has material emissions impact (e.g. HVAC, EVs, solar kits)
Commercial Real Estate Loans	Building performance (EPC & smart meter data) used to adjust loan structure
Sustainability-Linked Loans	KPIs are backed by assured carbon metrics (e.g. via Perseus + CAP)

⁶<https://gov.uk/government/statistics/business-population-estimates-2023/business-population-estimates-for-the-uk-and-regions-2023-statistical-release>

Incentives to support SMEs and financial service providers can encourage:

- Investment in *verified* emissions-reducing upgrades (e.g. retrofits, electrification, renewables, smart energy systems)
- Use of Perseus-enabled smart data infrastructure to *assure performance* (measurement, reporting, verification) and avoid greenwash
- Financing through *diverse* financial products and innovative incentives (e.g. leasing, sustainability-linked loans, debt and credit instruments, including cash-flow based inward investment from the SMEs themselves)
- Expansion of impact from niche products to mainstream portfolios (e.g. CRE)
- Banks to green their balance sheets with evidence
- Policymakers to align incentives (e.g. tax relief, guarantees) with measurable outcomes

Why now?

- ‘Real-time’ assurable emissions reporting is now possible across SMEs, via regulated providers and using auditable smart meter data
- Incentives to reward verifiable action, not just asset purchases, can now be delivered
- Investment can shift from discretionary to strategic to improve cashflow and productivity
- Perseus aligns with existing Green Finance Strategy, Smart Data legislation, and Procurement rules (e.g. PPN 06/21)
- Perseus begins to address the challenge of tenant-based occupancy, enabling engagement through the commercial real estate value chain and blended incentive models
- Assurable emissions reduction can be automated & could unlock tax-related incentives
- Solutions can be embedded where customers already are: in existing accounting tools (e.g. Sage, Intuit) and existing banking channels. This unlocks direct *reach* to hundreds of thousands of companies
- Creates public-private delivery model for smart data infrastructure at key inflection point (align policy instruments with data-assured outcomes)
- Banks can improve ESG scoring and regulatory positioning (e.g. PRA climate risk, ISSB)

Potential impact

- Accelerate uptake of sustainable finance across tens of hundreds of thousands of SMEs
- Reduce cost to the UK per tonne of CO₂ saved via private capital leverage
- Automate measurement, reporting and verification (MRV)
- Enable greater informed lending activity through better risk insights
- Mobilise finance while strengthening UK supply chains, unlocking direct investment, and increasing taxable growth from new retrofit, energy, and technology activity.

2.3. Supporting the UK's Clean Power Mission

Perseus helps deliver the UK's Clean Power Mission by unlocking assurable energy data from SMEs to enable smarter finance, faster investment, and more accountable emissions reduction.

Specifically:

- Making SME electricity use visible and verifiable
- Mobilising green finance for clean energy upgrades
- Empowering SMEs in the net zero transition
- Creating feedback loops between energy data, finance, and policy
- Laying technical foundations for Smart Data-enabled energy systems

Perseus enables SMEs to give permission for their energy consumption data and its carbon intensity at the time and location of use to be accessed and translated into standardised, auditable emissions metrics. This makes the demand-side of the power system more visible to financial institutions, carbon reporting platforms, and the wider energy market.

By providing lenders with assured emissions data, Perseus de-risks lending to SMEs for clean power interventions such as solar installations, electrified equipment, or energy efficiency retrofits. It enables the creation of sustainability-linked finance products that reward emissions reduction, making clean power investments financially attractive.

SMEs account for nearly half of UK business emissions, yet often lack the tools or support to decarbonise. Perseus lowers the barrier by embedding emissions reporting directly into accounting and energy software, enabling SMEs to access finance, understand their footprint, and invest in clean power solutions without needing to become carbon experts.

By aligning with the UK's Smart Data strategy and Data (Use and Access) Act, Perseus serves as a model for secure, permissioned data sharing at scale. It helps build the legal, technical, and governance infrastructure needed to support interoperable, user-driven clean energy markets: critical for a decarbonised grid.

2.4. An exemplar (voluntary) Smart Data scheme

Perseus is aligned with and supportive to the UK's Data Use and Access Act (DUAA) by enabling business-led permissions control, data rights, legal and technical interoperability, and directly supporting policy and code development that unlock data sharing.

It is engaged in ongoing dialogue with the Department for Business and Trade (DBT) and the Department of Energy Security and Net Zero (DESNZ) on the development of UK Smart Data schemes.

Learnings and approaches from Perseus are also informing the design and governance of Ofgem's Consumer Consent Solution⁷ (CCS), currently in development by the Retail Energy Code Company (RECCo). Initially addressing domestic energy smart meter data at its launch in 2027, the CCS is expected to expand rapidly across all smart meter data, and set precedents for other sectors. Perseus is also being used as a general case to

⁷ <https://retailenergycode.co.uk/our-programmes/consumer-consent-solution/>

input into the way that smart data schemes can legally, procedurally and technically integrate with the CCS.

Work is underway to explore alignment and enable trust information to be shared between Open Banking and Perseus. This is the first step towards demonstrating how smart data schemes in different regulatory environments can coordinate to reduce friction and compliance burdens, and increase data portability for end users.

This will align policy and legal requirements so Perseus could rely on Open Banking for organisational identity and underlying know-your-business (KYB) checks, reducing paperwork and time-to-membership for FSPs and CAPs who participate in both schemes. Later phases may enable permission-based, secure and assured data flows between the two schemes.

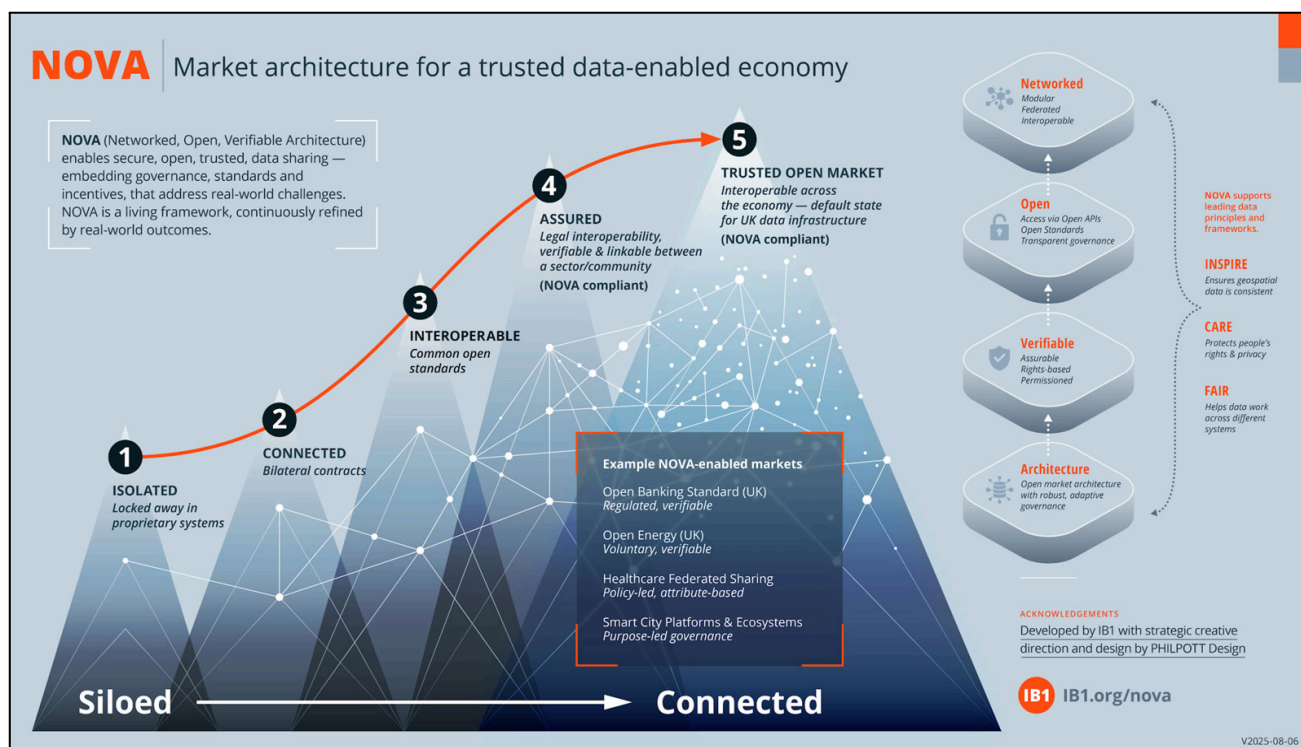
2.5. Market architecture for interoperability at scale

Perseus is underpinned by an open market architecture approach. NOVA⁸ (Networked, Open, Verifiable Architecture) provides a maturity scale with levels from Isolated (1) to Trusted Open Market (5). Work is in progress to characterise organisations' data publishing maturity, which affects their ability to participate in data sharing infrastructure. Organisations that are technically mature can participate at Levels 1-3, but unless their data governance is also mature, in particular for cross-sector data interoperability, data sharing with levels 4-5 will present scaling challenges.

Perseus is an emergent (voluntary) scheme at Level 4-5.

Schematic 2: NOVA Principles (IB1, 2025)

The NOVA architecture is particularly relevant to the sustainable finance ecosystem, which spans sectors across the real and financial economies.

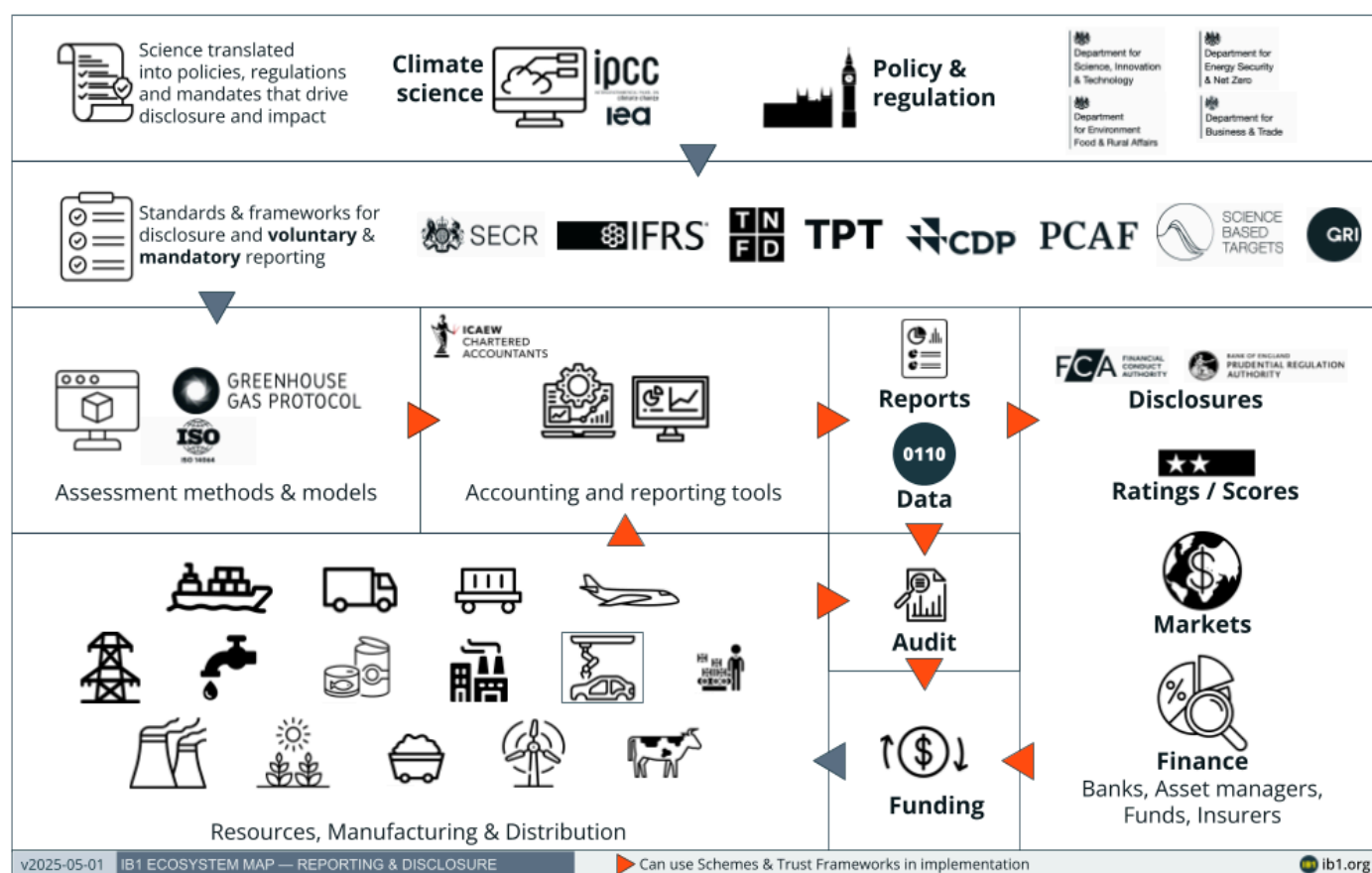


⁸ ib1.org/nova

Currently, reporting and disclosure involve a highly complex landscape⁹ of organisations working across a broad range of data types and areas including environmental measurement, policy and regulation, climate action, and technology/data infrastructure. The development of standards, frameworks, and tools spans initiatives from the ISSB and GHG Protocol to the EU's SME-focused VSME reporting standard.

Together, these various initiatives illustrate that global efforts are both highly involved (and excessively costly to SMEs today). However, there are concerted efforts to converge toward consistent and practical disclosures, which Perseus supports.

The Perseus approach assumes that access to assurable raw consumption data is foundational to credible outcomes, and that any approach must be scalable to millions of SMEs. Using a trusted data sharing approach, embodied in the Perseus Scheme and Trust Framework, can help many actors, from regulators to financial institutions, interoperate using shared principles and legal, secure, interoperable data.



Schematic 3: Mapping data flows between the real and financial economies (IB1, 2025)

⁹ <https://ib1.org/ecosystem>

3. Value cases, outcomes & applications

Perseus works to deliver value across the finance ecosystem including for banks, application vendors and data providers, to SMEs, reporting bodies and regulators. By enabling trusted, permissioned access to real-world emissions data, it reduces cost and friction, increases trust, and de-risks financial incentives. Key benefits for stakeholder groups, illustrating how Perseus can catalyse actionable insights, opportunities for growth, lower cost of compliance, and measurable impact include:

Financial Service Providers (FSPs)

Value case

De-risk and scale green finance through access to assurable SME emissions data. Enable a scalable, market-wide transformation that allows financial institutions to embed environmental performance into everyday operations.

Key benefits & outcomes

- Power sustainability-linked loans & green products as a routine, low-friction part of financial decision-making
- Improve PCAF, IFRS, and SDR compliance
- Reduce data-collection costs and due-diligence friction
- Enhance brand trust and regulatory alignment
- Shape standards via national collaboration

Example applications

- Green loans and overdrafts
- ESG-integrated credit risk models
- Portfolio transition-risk monitoring
- Sustainability-linked savings products

Carbon Accounting Providers (CAPs)

Value case

Expand the total addressable market with verified, high-resolution data.

Key benefits & outcomes

- Automate accurate PCAF-aligned emissions reporting
- Reduce manual data sourcing and validation
- Differentiate with “Perseus-enabled” assurance
- Integrate into green-finance workflows
- Access shared infrastructure and SME clients

Example applications

- Automated SME emissions dashboards
- MRV (Measurement, Reporting & Verification) services
- Finance readiness reports
- Embedded carbon reporting

Energy Data Providers (EDPs)

Value case

Enable compliant, permissioned reuse of energy data for sustainability.

Key benefits & outcomes

- Meet Data (Use and Access) Act & GDPR requirements
- Monetise trusted data services without selling raw data
- Support net-zero delivery through verified data flows
- Reduce bilateral risk and technical overhead
- Build partnerships with CAPs and FSPs

Example applications

- Verified data APIs for finance & reporting platforms
- Emissions-based tariff offers
- Demand-flexibility & retrofit insights
- Smart Data sandbox participation

Small & Medium Enterprises (SMEs)

Value case

Automate carbon reporting and link sustainability to financial advantage.

Key benefits & outcomes

- Save time & admin via automatic emissions reporting
- Identify energy and cost-saving opportunities
- Access lower-cost green finance and better terms
- Build credibility and avoid greenwashing
- Strengthen resilience and competitiveness

Example applications

- Automatic carbon reports from smart meters
- Preferential green lending & savings rates
- Verified sustainability credentials for tenders
- Access to transition planning tools

Regulators & Policymakers

Value case

Provide a market-led mechanism for trustworthy sustainability data.

Key benefits & outcomes

- Reduce fragmentation & improve policy insight
- Support Smart Data & Green Finance strategies
- Enable evidence-based incentives & tax schemes
- Align public & private reporting frameworks

Example applications

- Smart Data Scheme alignment & integration
- Sustainability-linked tax or grant schemes
- Monitoring SME progress toward net zero

Technology & Data Ecosystem Partners

Value case

Open, interoperable infrastructure for smart data innovation.

Key benefits & outcomes

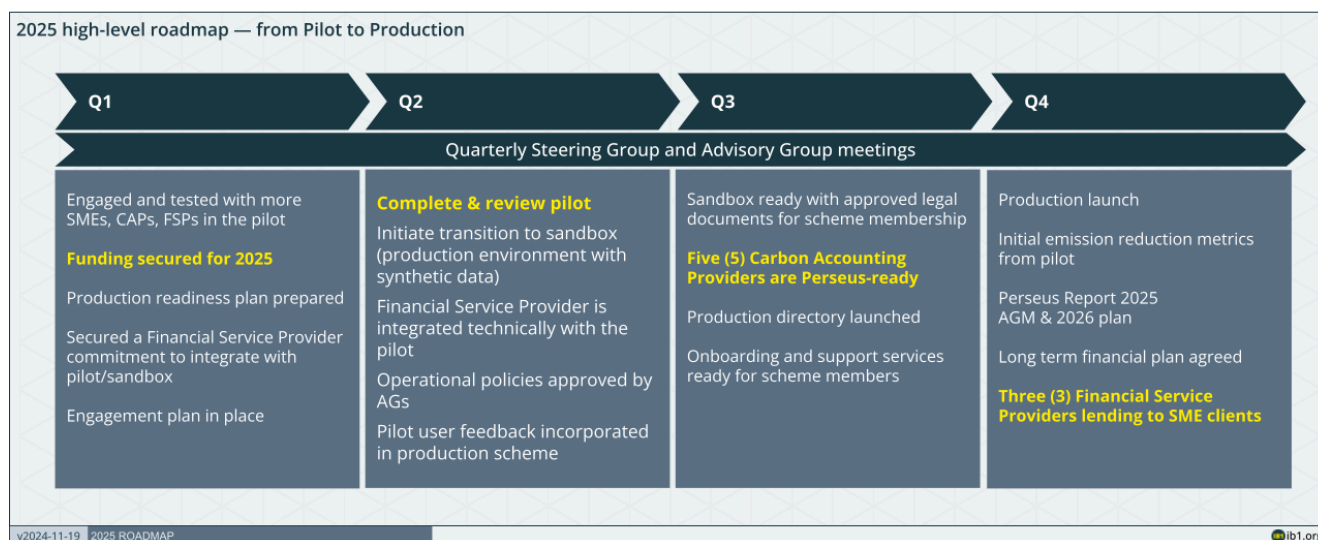
- Reduce integration costs via shared APIs & governance
- Enable plug-and-play ESG tools & analytics
- Accelerate digital public infrastructure adoption
- Foster cross-sector collaboration & interoperability

Example applications

- Development of Perseus-ready APIs & SDKs
- Integration with ERP, finance & regulatory platforms
- Interoperable ESG reporting tools

4. Outcomes in 2025

Perseus members successfully co-designed, developed and delivered against the 2025 roadmap.



Schematic 4: Perseus 2025 high-level roadmap (IB1, 2025)

To *go far together*, over 200 people from over 110 organisations engaged in the programme, from product teams, to customer account managers, policy makers to lawyers, developers to sales teams. Steering and Advisory Group members participated in 29 governance meetings during the year, to ensure all needs were captured and alignment maintained.

4.1. Evolution from financing green to sustainable finance

Perseus' evolution in 2025 marked a decisive evolution from *financing green* (supporting discrete green projects) to *sustainable finance*, embedding trusted emissions data directly into mainstream financial systems.

Example use cases (anonymised based on programme anti-trust and commercial confidentiality requirements¹⁰) in development by FSPs include:

FSP: Commercial Real Estate (CRE)

A Perseus member is exploring the use of Perseus to make loan decisions for sustainability-linked loan products in the CRE.

In this instance, Perseus will also enable the measurement, reporting, and validation (MRV) of impact, replacing proxies for energy consumption such as energy performance certificates (EPCs) with assurable primary data.

This has the potential to save £20k-30k in third party audit fees per transaction. Such audit fees limit a large part of the loan book from sustainability-linked products, opening the potential to significantly increase the addressable market.

¹⁰ <https://ib1.org/sops/antitrust-guidelines>

FSP: Sustainability-linked SME deposit products

A Perseus member is evaluating the creation of financial incentives for SMEs which are funding their sustainability journey via cashflow instead of lending.

Perseus can enable FSPs to extend sustainable finance incentives to such SMEs by linking deposits to verified energy and emissions performance.

Using permission-based, assurable data, Perseus could support the application of better interest rates or related incentives tied to performance indicators such as energy usage and emissions intensity. This allows FSPs to widen the addressable market beyond lending to data-enabled deposit products and support transition finance.

FSP: Portfolio emissions reporting & modelling

A Perseus member is investigating its use to improve the quality of SME emissions reporting to support lending and financial incentives.

Perseus enables access to permission-based, assurable carbon-intensity insights, delivered as monthly aggregated data with clear provenance and quality signals.

This supports more accurate financed-emissions modelling to estimate and track financed emissions across portfolios, improves PCAF data quality, and provides greater confidence in regulatory and public disclosures, without FSPs needing to handle raw smart-meter data.

Working with CAPs, new forms of scenario modelling across sectors and markets is achievable, increasing the potential serviceable market.

4.2. Live sandbox enables Members to be Perseus-ready

Based on a successful pilot, Perseus members including Sage, Tese, Quantaco, Notch and Perse began development work to make their solutions 'Perseus ready'. The Perseus sandbox is now live and functionally equivalent to the production environment: it is the step prior to 'go live' for market-facing services.

Using the sandbox, CAP members are able to secure permissions, retrieve SME energy data from a synthetic energy data provider, process it to emissions and generate a signed report within a controlled development environment.

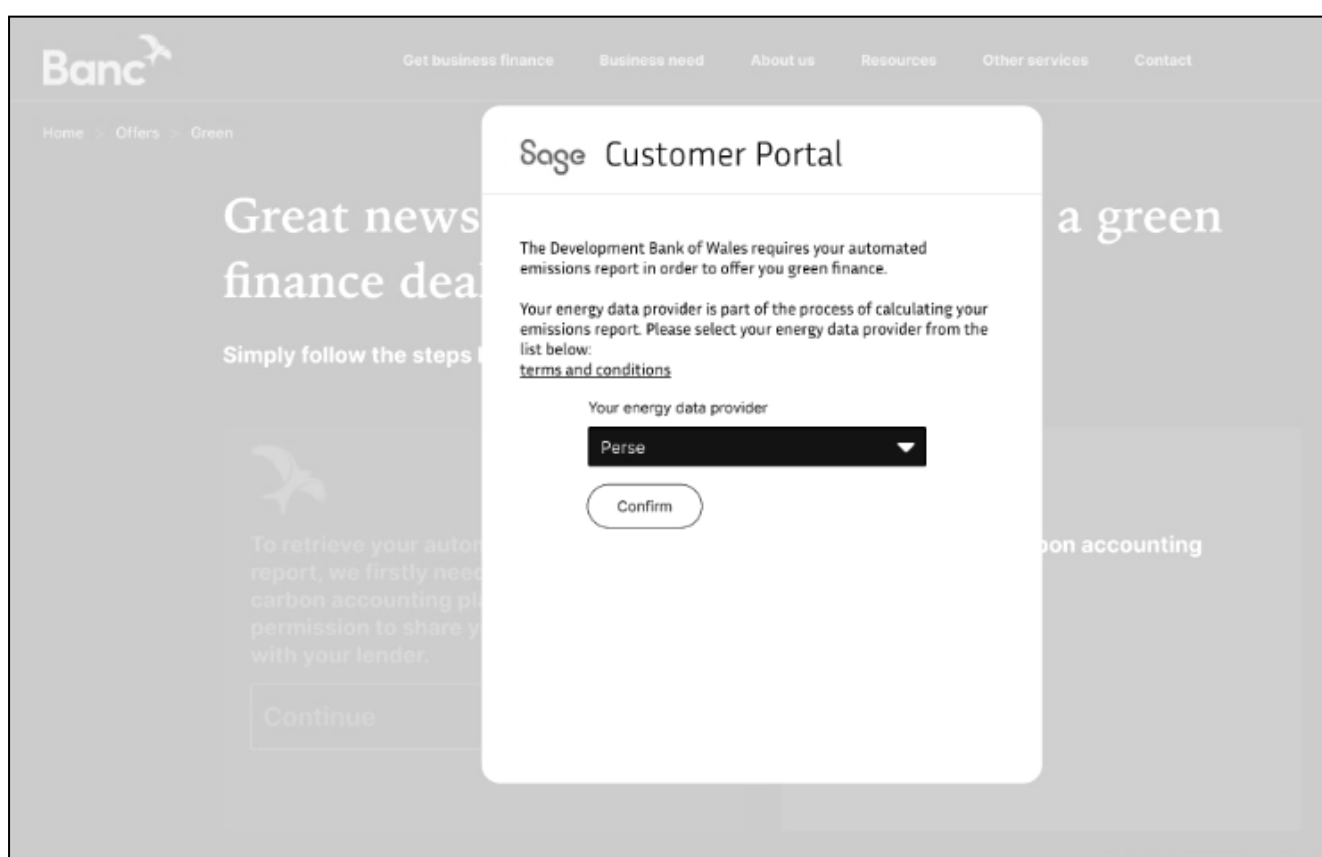
This means that all the technical pieces are in place for smart meter data to flow - with permission and data provenance - into the financial economy where it can unlock green lending and offerings to support SMEs to save costs and reduce emissions.

4.3. A successful Pilot

Over a six-month period in 2025 H1, the technical, legal, and user experience (UX) aspects of Perseus were tested. The pilot assessed multiple elements of Perseus, including:

- Technical, legal, and contractual elements to ensure data integrity, compliance, and trust between parties.
- Onboarding materials and guidance documents to evaluate whether instructions and support materials were clear, comprehensive, and appropriately targeted.
- Assured and secure data flow between an EDP and a CAP to produce a secure, assured emissions report for the SME to share with a FSP.
- User journey mapping to test the practicality, branding flexibility, and integration of Perseus processes within participants' existing digital environments.

Further details of the pilot findings are available in the supporting documents.¹¹



Screenshot 1: Pilot concept screen (IB1, 2025)

¹¹ <https://ib1.org/perseus>

4.4. Technical development tested and deployed

Technical development in 2025 progressed through two phases:

1. Pilot phase: refined documentation, trust services, and specifications based on participant feedback;
2. Production phase: focused on service architecture, security, and launch readiness, informed by member workshops and Advisory Group reviews.

Details of the technical work undertaken are in the supporting documents¹² and four (foundational) outcomes are highlighted below.

- **Production Sandbox environment launched**

Trust Services for the Perseus Sandbox environment launched in September. These include sandbox versions of the Registry, Directory, Member Portal, status dashboard, onboarding documentation and example apps. The sandbox environment is functionally identical to production, except that all the data is synthetic. It is designed to help members develop and test their integration without any data protection concerns.

IB1

Core (sandbox) Trust Framework

Perse (sandbox)

Valid until: 2026-10-30

Code: o9ksi1sd

Contact: controller@perse.io

Registered Address: Spaces, Winsley Street, England, Greater London, London, W1W 8HF, GB

Scheme Memberships

IB1

PERSEUS

Quantaco Ltd

Valid until: 2025-10-28

Code: nwjoo2p0

Contact: aneysha@quantaco.ai

Registered Address: 17 Hanover Square, London, Greater London, London, W1S 1BN, GB

Scheme Memberships

IB1

PERSEUS

Tese Capital (UK) Limited

Valid until: 2026-11-12

Code: wah033vf

Contact: kuzi@tese.io

Registered Address: 27 Old Street, London, Greater London, London, WC1H 9NY, GB

Scheme Memberships

IB1

PERSEUS

Privacy

Website Terms

About

Membership Terms

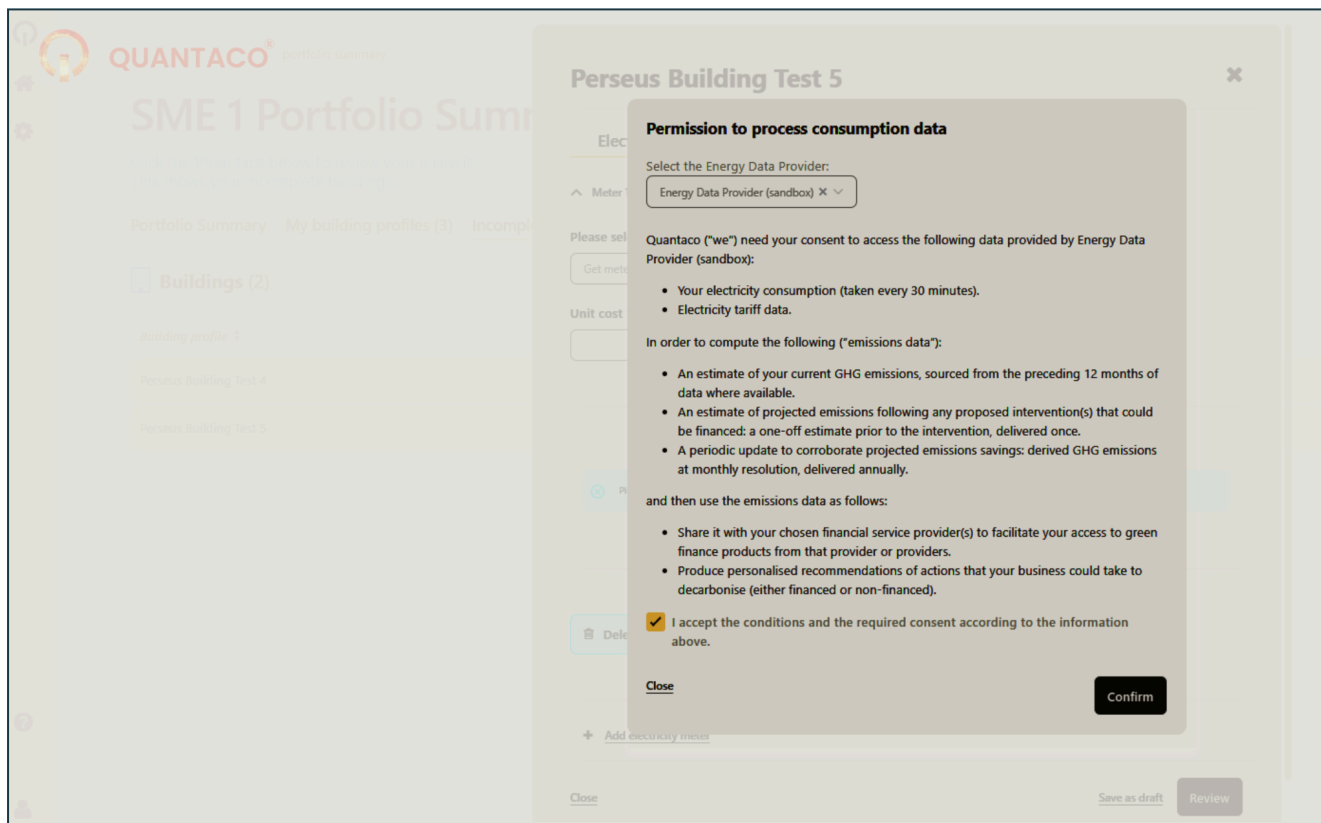
Contact

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Screenshot 2: Perseus Sandbox (IB1, 2025) [<https://directory.core.sandbox.trust.ib1.org/>]

¹² <https://ib1.org/perseus>



Screenshot 3: Quantaco sandbox integration screen shot (Quantaco, 2025)

Perseus in production provides the same services but with higher availability & performance, increased security, especially on build and deployment, and enhanced monitoring.

- **Technical and legal updates to extend to gas agreed**

Perseus will implement gas consumption in 2026. The technical and legal updates to support the extension to gas are minor, and have been agreed. The methodology approved is:

The sum of the products of the half-hourly consumption in cubic meters with the most recent published greenhouse gas conversion factor from the UK Government for Natural Gas covering the time of consumption.

- **Proof-of-concept iXBRL emissions report**

XBRL¹³ is the standard used for digital business reporting in regulatory environments around the world, including UK HMRC and Companies House¹⁴. XBRL support makes Perseus 'plug and play' for regulators, accountants and other financial systems, enabling the flow of emissions data into statutory accounts and other filings without manual reformatting. This aligns Perseus reporting with standards such as the IFRS Sustainability Disclosure Taxonomy (also called the ISSB), and demonstrates the potential for Perseus to be globally portable.

¹³ <https://xbrl.org>

¹⁴ <https://gov.uk/government/publications/xbrl-guide-for-uk-businesses/xbrl-guide-for-uk-businesses>

Perseus Emissions Report

Prepared for: **Money 4U Bank**

Not licensed for use by any other lender

Prepared on behalf of:
Acme Widgets Ltd
 123 High Street
 Anytown
 XX1 1XX
 Company number: 12345678

Prepared at: 14:15:16 UTC, 2024-11-12

Consumption period: 2023-10-01 - 2024-09-30

Data source: Smart Meter

Missing data: No

Processing: Calculations performed by the CAP using half-hourly grid intensity and half-hourly consumption. Perseus requires this to be the sum of the products of the half-hourly consumption and the corresponding grid intensity at the meter postcode.

Permission ID: DF1ED5764CA34

Month	Electricity consumption emissions (tCO ₂ e)
October 2023	1.234
November 2023	2.345
December 2023	3.456

Fact Properties

Concept
 • (direp) Emissions, indirect, electricity

Properties

Date 1 Oct 2023 to 31 Oct 2023

Fact Value 1.234 tCO₂e

Accuracy thousandths

Scale Unscaled

Change No prior fact in this report

Entity [UK CRN] 12345678

Concept direp:EmissionsIndirectE...

Type dt:types:ghgEmissionsItemType

Labels

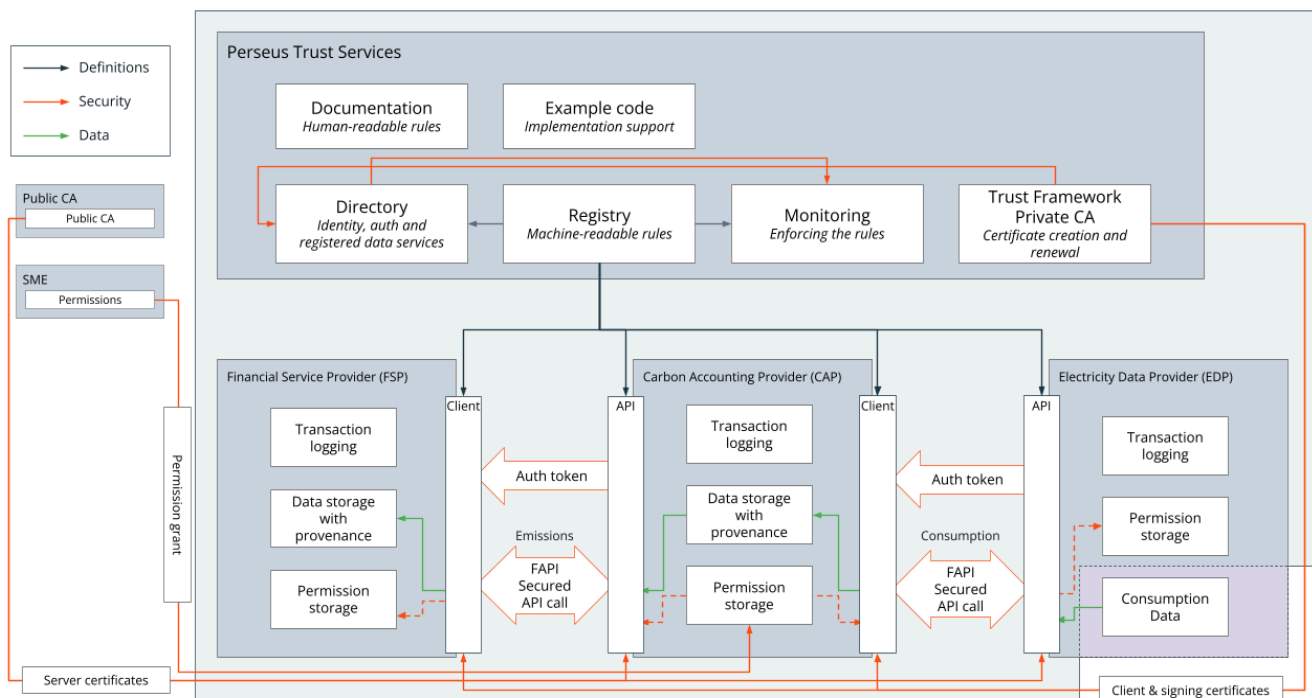
Standard Label
 Emissions, indirect, electricity

Verbose Label
 1.4.73

Screenshot 4: Example Perseus emissions report showing details of an XBRL data field (IB1, 2025)

● General-purpose Trust Services refined

Informed by the needs of Perseus, IB1 has further refined its work on the standard Trust Services¹⁵ required to fully document and operate data sharing schemes. These include reusable formats for rules, a machine- and human-readable Registry defining the Perseus scheme, a Directory of scheme members with their roles and data services, and a secure portal for members to be issued identity certificates and maintain their scheme information.



Schematic 5: Perseus technical architecture (IB1, 2025)

¹⁵ <https://ib1.org/join/trust-services>

5. Plan for 2026

Vision	Unlock access to financial incentives that reduce emissions for every UK SME business.
Mission	Provide the smart data infrastructure that automates and embeds credible emissions and energy insights into financial, accounting and reporting systems.

(Vision & Mission revision candidate, subject to Advisory Group 4 approval)

2026 Roadmap and milestones

Q1-Q2 <ul style="list-style-type: none"> • Scheme-as-a-service: Onboarding and support services ready for members • Member Engagement plan in place • Secure funding: sales and renewals • Gas data technically available in Perseus • Engagement with FSPs to develop requirements • Use cases logged and prioritised 	Q3-Q4 <ul style="list-style-type: none"> • Scheme-as-a-service: Product enhancements • RECCo integration • FSP integration • Member stories shared • AGM and 2026 report • 2027 plan
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Go to market

2026 will focus on go-to-market: FSP product engagement and supporting their SME outreach to develop both use cases and case studies; EDP and CAP integration and implementations; onboarding new members.

Coordinated communications from across commercial and steering group members will seed and amplify the Perseus-enabled story across the ecosystem.

Unlock electricity and gas data from diverse EDPs

Incorporating complete energy data into emissions reporting will extend energy coverage from electricity (Scope 2) to include gas (Scope 1). This requires continued engagement with both national smart meter initiatives and commercial real estate management systems to address non-owner occupied sites and sublet offices.

Streamline SME permissioning process

Perseus will develop a proposal for a Smart Energy Code change to enable verified address information held by CAPs to be provided to DCC Other Users so that no further ID is required in order to access smart meter data for the address. If adopted, this will dramatically reduce friction in the permissioning process for SMEs.

Service operation and technical evolution

Operating and maintaining the sandbox and production environments, onboarding members and making relevant any necessary improvements to the implementation and processes. This will include an independent review of Perseus's technical and operational security.

Increase membership reach and value

2026 will scale adoption with new members which will optimise the overall costs for all.

To address more industry use cases, gas data will be integrated into Perseus. This will allow lenders to apply Perseus to more financial products and deploy more capital, and CAPs to offer more comprehensive and personalised interventions and recommendations. For SMEs, this represents larger opportunities for energy and cost savings as well as more access to finance.

Engaging with Perseus will be made easier with automation and streamlined onboarding, and strengthened interoperability with RECCo. Interoperability with XBRL will also increase Perseus' impact by allowing data to be openly discoverable and machine-readable.

As a larger number of 'Perseus-ready' solutions come online throughout 2026, an open, competitive, and transparent marketplace will be established, allowing lenders to access Perseus data as well as additional insights relevant to their finance use cases, whether those relate to real estate finance, sustainability-linked loans, cashflow financing, or other financial products.

Support the broader ecosystem: Project Orion & Carbon Commons

Perseus addresses primary inputs for both the European reporting standards (such as EFRAG vSME¹⁶) and the proposed UK SME voluntary standard¹⁷.

Project Orion aims to build on the success of Perseus to develop a Scheme for sharing machine-readable reporting information in a structured, permissioned, and assurable way across markets. This will address the growing need for SMEs to respond to demands from their customers, ratings agencies and national procurement rules without creating multiple bespoke reporting processes.

Carbon Commons¹⁸ is a new joint initiative to fix the flaws in supply chain carbon accounting. Conventional carbon accounting methods rely on inconsistent and incomplete data, resulting in fragmented, incomparable, and often unrealistic emissions estimates across complex supply chains. Carbon Commons will create the first transparent, unified, and fit-for-purpose methodology and principles for calculating hybridised emissions factors.

¹⁶ <https://efrag.org/en/smes-and-sustainability-reporting>

¹⁷ <https://gov.uk/guidance/uk-sustainability-reporting-standards>

¹⁸ <https://ib1.org/carbon-commons>

Acknowledgements

Perseus has been developed through the leadership, expertise and sustained engagement of many organisations and individuals: over 200 people contributed to Perseus development over the past year.

We are particularly grateful for the guidance provided by the Delivery Oversight Committee, co-chaired during 2025 by Jon Geldart (Institute of Directors) and Tony Greenham (British Business Bank), with participation from Hannah Gilbert, Alan Vallance and Richard Spencer (ICAEW), Dame Teresa Graham DBE (SME Commission at UK Finance), and Jennifer Tankard (UK Finance).

We are grateful to the members of the Steering and Advisory Groups, with particular thanks to our SG & AG co-chairs, Tony Greenham (British Business Bank), Claire Reid (Barclays) and Zarina Banu (Tide). We also acknowledge Demand Logic, Perse, Quantaco, Sage, Tese and Voltview as pioneer early adopters whose readiness to integrate with the Perseus sandbox has provided valuable practical insight.

In addition our AGMs have been made possible by the support of Barclays in 2024 and by The Carbon Trust for 2025. Convening our members in person has been invaluable.

Perseus is the product of the collective effort of all our members, reflecting a shared ambition to move sustainable finance from the margins to a core part of the UK economy.

**THE TIME
FOR THEORY
IS OVER**