

E8 - Report on Key Use Cases and Sector Priorities

Sustainability Data Space

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Version Control

Version	Date	Authorship	Description of change
1.0.	16th December 2025	A. Arias	Initial version, final layout

1. Purpose of the Deliverable

This report consolidates and structures the key use cases and sector priorities identified during the Sustainability Data Space workshops. It serves as a strategic guide to support the definition and development of sector-specific functionalities within the data space.

The report highlights how corporate sustainability (ESG) data can be leveraged to address concrete challenges across multiple sectors, while establishing a clear prioritization framework aligned with:

- Stakeholder needs
- Project strategic objectives
- The technical and governance framework defined for the Sustainability Data Space

This deliverable provides a decision-making basis for the next implementation phases, including pilots, ontology development, and governance design.

2. Methodology and Alignment with Previous Deliverables

The content of this report is based on:

- Insights and conclusions from E7 - Workshop Minutes and Conclusions
- Sectoral use cases presented by CTIC, UPM, and Soltel
- Cross-sector discussions on governance, interoperability, and data sovereignty
- Alignment with European regulatory drivers (CSRD, Data Act, Data Governance Act)

Each use case has been assessed using a common evaluation framework to ensure consistency and comparability across sectors.

3. Evaluation and Prioritization Criteria

Sectoral needs and use cases have been analyzed and ranked using the following criteria:

3.1 Impact

- Contribution to CSRD compliance and ESG reporting quality
- Potential to generate measurable economic, environmental, or social value
- Ability to scale across organizations and sectors

3.2 Feasibility

- Technical maturity and availability of data
- Alignment with the federated data space architecture
- Readiness of stakeholders and existing initiatives

3.3 Urgency

- Regulatory pressure and compliance timelines
- Market demand and operational pain points
- Risk of inefficiency or non-compliance if not addressed

4. Key Sector Use Cases

4.1 Agri-food Sector: ESG Traceability and Certification

Challenge

Agri-food companies face increasing pressure to demonstrate product origin, sustainability practices, and regulatory compliance, often relying on fragmented and manual reporting processes.

Use Case

A federated ESG data space enables end-to-end traceability (DOP/PGI), combining production, logistics, environmental impact, and certification data.

Value Generated

- Automated and auditable ESG reporting
- Increased trust for regulators, consumers, and partners
- Enablement of value-added services (smart certification, premium labeling)

4.2 Energy Sector: Local Energy Communities and ESG Reporting

Challenge

Energy communities require transparent and trusted mechanisms to manage production, consumption, and sustainability metrics across multiple actors.

Use Case

Shared data spaces allow citizens, operators, and public entities to exchange energy and ESG data under controlled and sovereign conditions.

Value Generated

- Improved energy efficiency and transparency
- Support for energy transition objectives
- Compliance with sustainability and reporting obligations

4.3 Smart Cities: Emissions, Mobility, and Urban Sustainability

Challenge

Cities struggle to consolidate ESG-related data across transport, infrastructure, climate, and public services, limiting comparability and decision-making.

Use Case

Urban data spaces integrate multisource data using shared ontologies to support GHG inventories, mobility optimization, and urban planning.

Value Generated

- Consistent and auditable emissions reporting
- Data-driven policy decisions
- Public-private collaboration through prosumer models

4.4 Health Sector: Data Sharing for Research and Clinical Trials

Challenge

Health data is highly sensitive, fragmented, and difficult to reuse for research while ensuring compliance, consent, and trust.

Use Case

Federated health data spaces enable secure, consent-based sharing of clinical and research data using semantic discovery and AI-supported analysis.

Value Generated

- Faster research and diagnosis (e.g. rare diseases)
- More efficient clinical trial recruitment
- Strong data sovereignty and patient trust

4.5 Cross-sector ESG Reporting and Compliance Automation

Challenge

Companies across sectors face duplicated ESG reporting efforts, inconsistent methodologies, and high operational costs to comply with CSRD.

Use Case

A shared ESG ontology and federated data exchange model allows organizations to reuse, validate, and audit ESG data across value chains.

Value Generated

- Reduced reporting burden
- Improved comparability and audit readiness
- Foundation for automated compliance and analytics

5. Sector Prioritization Matrix

The following matrix ranks sector priorities based on the defined criteria:

Sector / Use Case	Impact	Feasibility	Urgency	Priority Level
Cross-sector ESG Reporting & Compliance	High	High	High	Very High
Agri-food Traceability & Certification	High	Medium	High	High
Smart Cities (Emissions & Mobility)	High	Medium	Medium	High
Energy Communities	Medium	Medium	Medium	Medium
Health Data & Clinical Trials	High	Low-Medium	Medium	Medium

6. Strategic Alignment with Project Objectives

All prioritized use cases align with the core objectives of the Sustainability Data Space:

- Semantic interoperability through shared ESG ontologies
- Federated governance and data sovereignty
- Trust mechanisms (identity, permissions, traceability)
- Multisector scalability and reuse

The prioritization supports a phased approach: starting with cross-sector ESG reporting, while progressively integrating sector-specific pilots.

7. Conclusions

- Sector-specific use cases confirm that sustainability data spaces address real, structural needs rather than isolated technical challenges.
- Cross-sector ESG reporting emerges as the highest priority, acting as a foundation for all other use cases.
- Ontologies and governance are critical enablers for scalability and trust.
- A clear prioritization framework ensures efficient allocation of resources and stakeholder alignment.

8. Recommended Next Steps

- Select 2-3 high-priority use cases for pilot implementation.
- Refine the ESG ontology based on selected sectors.
- Define sector-specific governance and access rules.
- Share this report with stakeholders to validate priorities and roadmap.