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Data for All

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Data-driven Public Service Delivery in the North Sea Region

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Do Data - For a Greener Future

[Open data for monitoring climate action in Vejle]

Pilot Strategy and Action Plan (PSAP)

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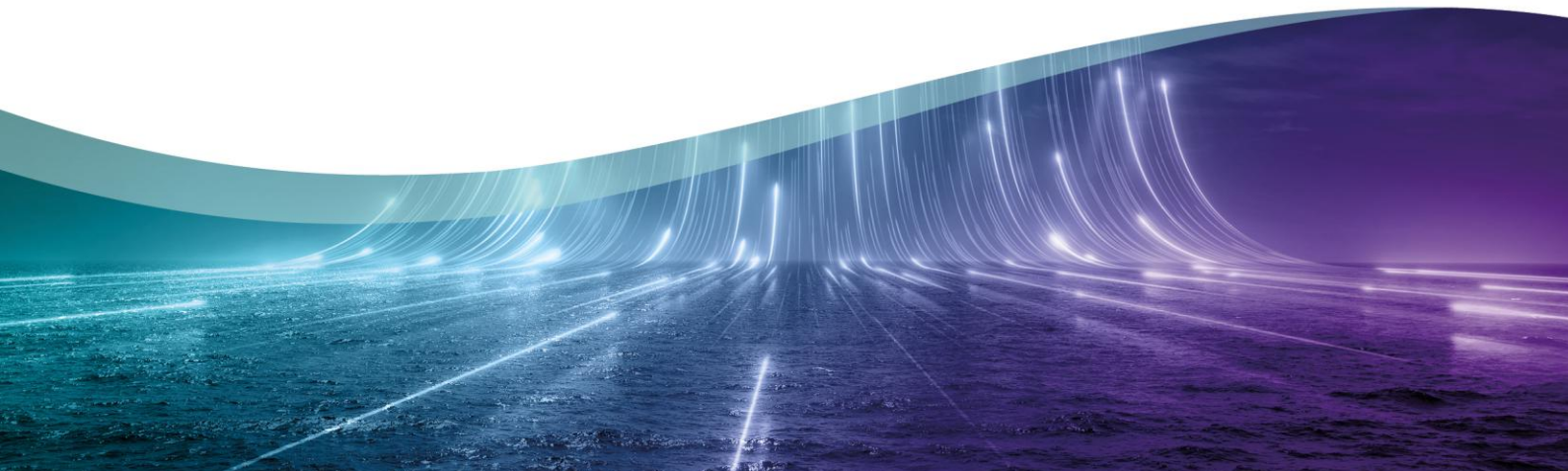

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Pilot Strategy

1.1 General Information

Name of Pilot (feel free to be creative!)	**Do Data - For a Greener Future**
Name of Author of PSAP	Gitte Alberen (Vejle Erhverv)
Name of Organisation Leading the Pilot (Original Language)	Vejle Kommune
Name of Organisation Leading the Pilot (English)	Vejle Municipality

Partner	Role	Involved staff
Vejle Kommune	Project partner	• Project Coordinator • Business Consultant • Administrative assistant • Director for Business & Tourism
Alexandra Institute	Technical development (external service provider)	• Principal Solution Architect, PhD • Senior Software Engineer • Senior Research and Innovation Specialist, PhD • Software Developer

1.2 Fundamentals

Summary

Do Data is an open-source digital solution that reuses and enriches Climate Compass[1] data from local businesses to generate insights that support Vejle Municipality's climate action plan.

The prototype shows how existing datasets, combined with open data, can improve decision making, benchmarking, and collaboration.

Companies gain a clearer understanding of their energy related emissions, while the municipality receives aggregated and anonymised insights that strengthen climate governance.

Do Data is not an ESG reporting tool and must not be used for regulatory disclosure. It focuses on understanding climate actions and supporting informed dialogue between companies and the municipality.

Initial position and fundamental idea

Vejle Municipality has adopted ambitious climate goals, including a 70 percent reduction in emissions by 2030 and climate neutrality by 2050. The climate action plan outlines several priority areas such as strategic energy planning, sustainable mobility, agricultural transformation, green construction, and the phaseout of fossil heating. These efforts depend increasingly on reliable and accessible data.

Vejle Municipality holds extensive climate data used in the existing Power BI monitoring tool but lacks structured insights into business sector emissions. This makes it difficult to understand companies' climate impact or integrate these insights into internal planning and dialogue.

At the same time, more than 15.000 businesses in Denmark had already completed Climate Compass calculations, yet these datasets remained underutilised for shared learning, benchmarking, and strategic planning.

The fundamental idea behind Do Data is that climate action becomes more effective when existing data is used more intelligently rather than collecting new data. The pilot therefore focuses on reusing Climate Compass data provided voluntarily by companies, enriching it with open energy datasets, and transforming it into meaningful narratives and visual insights.

Do Data also explores how the municipality can better support businesses in their early climate efforts by providing clear insights into CO2 emissions and green transition opportunities. A shared data infrastructure helps reduce repeated data requests, lowers reporting burdens, and creates a more trusted and service-oriented dialogue between the municipality and local companies.

[1] The Climate Compass (Klimakompasset) is a free, digital tool developed by the Danish Business Authority and The Danish Energy Agency.

The development principles include open standards, open source, data minimisation, and interoperability with OS2[2] to enable future replication across Denmark.

Challenges

The pilot addressed several challenges that affected both businesses and local authorities. Many companies in Vejle are actively working to reduce their emissions, yet they often struggle to understand and use their own data. The Climate Compass provides structured carbon calculations, but it does not offer benchmarking, local insights, or support in identifying the most effective climate actions within the municipality. As a result, companies lacked guidance on where to focus their efforts.

Municipalities faced related challenges. They receives climate related data from many sources, but information on business sector emissions is fragmented and governed differently across systems. Without a shared digital infrastructure, these datasets cannot be combined into reliable, aggregated insights that supported targeted climate planning.

The pilot identified several barriers. **Knowledge barriers** arose when companies were unsure how to interpret Climate Compass results, or which data was relevant for guiding green transitions. Municipal staff often worked with strong datasets, but in departmental silos that limited cross sector insights.

Technical barriers were significant. Municipal systems at the time offered no way to process data from private companies without revealing identifiable information. There were no separation layers or technical safeguards that enabled secure, anonymised handling of company data, which restricted its use for aggregated climate insights. Ensuring interoperability and clear documentation of data provenance was therefore central to the pilot.

Regulatory and ethical barriers required attention to consent, governance, and transparency. The pilot applied strict data minimisation and anonymisation.

Organisational barriers related to collaboration. Before the pilot, no shared digital space existed where companies and the municipality could work with climate data together. Do Data created this shared space and tested new routines for governance, onboarding, and dialogue.

Goals

The overall goal was to create an open-source visualisation tool that helped both businesses and the municipality understand and monitor climate actions through smarter use of existing data. The pilot aimed to demonstrate how Climate Compass data, when combined with relevant open datasets,

[2] OS2 is a Danish public sector collaboration that develops and shares open source digital solutions, enabling municipalities to reuse software, avoid vendor lock in, and maintain systems collectively under open licenses.

could generate new insights that supported emission reductions and strengthened local climate governance.

By the end of the project the prototype was intended to:

- Import, validate, and visualise Climate Compass energy data submitted voluntarily by companies.
- Provide a simple and intuitive overview of a company's energy related emissions and historical trends where available.
- Enable benchmarking against anonymised sector averages derived from local Climate Compass submissions.
- Present tailored suggestions for potential climate actions based on the municipality's climate plan and business characteristics.
- Provide the municipality with aggregated and anonymised insights that supported strategic energy planning and shared climate dialogue.
- Demonstrate a scalable and reusable data architecture based on open source, open standards, and OS2 methodologies.

The solution was not designed for ESG reporting and did not include the modules required for regulatory compliance. Its focus was on climate understanding rather than corporate disclosure frameworks. In the future, such capabilities could potentially be incorporated into the Climate Compass itself, allowing national tools to benefit from the visualisations and insights developed through Do Data.

Long term, the ambition was that Do Data could become a foundation for shared climate data ecosystems between municipalities, companies, and national actors. Future extensions could include mobility, waste, and buildings once the energy module matured. These parameters were already part of the Climate Compass framework, meaning only limited adjustments to Do Data would be required to generate visualisations and benchmarking insights for these areas.

Future development of Do Data could move in several directions:

One pathway was to evolve the solution as an integrated extension to the existing Climate Compass.

Another was to develop it within the OS2 community, enabling municipalities to collaborate on a shared open-source module for climate monitoring.

A third direction was to use Do Data as a foundation for an intermunicipal data space for emissions and climate monitoring, where aggregated, anonymised insights on business emissions could contribute to a shared data ecosystem that strengthened regional and national climate governance.

Partners

Vejle Kommune

Vejle Erhverv (business services) led the pilot, coordinated stakeholder engagement, and ensured alignment with municipal climate strategies and public sector governance requirements. Through Vejle Erhverv, the municipality brought strong experience in supporting local businesses with

sustainability and climate planning, as well as long standing participation in EU projects related to green transition. This provided a solid basis for engaging companies contributing Climate Compass data and understanding their practical needs. Vejle's close relationship with the business community helped identify challenges and opportunities. The municipality also managed the integration of open datasets and contributed domain knowledge on climate planning and monitoring, shaping use cases and providing feedback throughout development.

The Alexandra Institute

Alexandra was responsible for the technical architecture, data processing pipelines, visualisation framework, and the open-source implementation. Their work ensured interoperability, documented data flows, and introduced privacy preserving mechanisms, creating a scalable foundation for future modules and reuse by other municipalities. As a national RTO[3] with strong expertise in data spaces, energy data, and digital solutions, Alexandra played a central role in shaping the pilot. Their research-based insight and understanding of public sector needs were essential for developing a robust prototype aligned with municipal practice and emerging national and European standards.

Stakeholders and beneficiaries

Climate, Environment, and Business Services contributed domain knowledge on climate planning and business engagement, and in return gained aggregated insights into business related emissions that had previously been unavailable, enabling more coordinated and evidence-based climate action.

The Legal function advised on data protection, consent, and governance, which strengthened trust and demonstrated that structured data sharing could take place responsibly.

Local Businesses and Business Networks provided Climate Compass data and participated in interviews and user tests. They gained clearer, more actionable insights into their emissions and saw the value of contributing data that returned as shared benchmarks and stronger collaboration with the municipality.

Citizens and Civil Society were indirect beneficiaries, as shared data flows enabled more transparent climate work and more targeted municipal interventions.

National Clusters and Networks such as DigitalLead and OS2 exchanged knowledge with the pilot, showing how shared practices across municipalities and national actors improve digital infrastructure and support scalable climate solutions.

[3] Research and Technology Organisations

Open Data Providers contributed datasets that, when combined with company data, created richer and more context specific climate insights.

Academic and Research Institutions, led by Alexandra as RTO, ensured research-based methods and benefited from practical insights into municipal climate data ecosystems.

Industry Associations followed the project and gained new examples of how collective data sharing strengthens environmental strategies.

Across all stakeholder groups, the pilot highlighted a core insight: significant gains arise when municipalities, businesses, researchers, and national actors share data and knowledge. This creates more accurate climate insights, stronger governance, and a foundation for coordinated action that no single actor could achieve alone.

1 - Takers
Vejle Municipality and local businesses/companies.

The primary taker is Vejle Municipality, which will integrate the solution into its climate governance workflows. The municipality will use the aggregated data to create business climate dashboards to support existing climate monitoring and planning, assess progress in priority areas, and inform cross departmental decisions.

Local companies that submit Climate Compass data are also takers. They use the solution as a practical interface to understand their emissions and select relevant actions.

Secondary takers include other Danish municipalities, particularly through OS2, which can reuse and adapt the open-source code.

2 - End Users

End users are business owners, sustainability managers, and municipal staff who access the dashboards and/or data. They gain clear explanations of emissions, potential actions, and trends.

The broader population benefits from more targeted climate initiatives, improved energy planning, and reduced emissions in the local business sector.

Project impact strategy

Impact Statements for **Do Data – for a Greener Future**

First positive change:
Improved climate decision making for both businesses and the municipality.

How: By transforming Climate Compass data into visual insights, benchmarks, and actionable suggestions supported by open datasets.
Takers: Vejle Municipality, local businesses using Climate Compass.
End users: Municipal planners, sustainability managers, company employees.
Scale: Aggregated insights based on the share of local businesses that participate.
When: First visible effects within year 1 of implementation.

Second positive change:
Reduced friction and higher adoption of climate data use among SMEs.

How: By simplifying complex datasets, reducing interpretation barriers, and offering a shared digital space for climate dialogue.
Takers: Local SMEs and business networks.
End users: Companies working actively with climate reductions.
Scale: Engagement of at least 50 companies in the first full cycle.
When: Consolidation over the next 2 to 3 years.

Third positive change:
Creation of a scalable open-source model that can be reused by other municipalities.

How: By delivering a prototype built on open standards, clear governance, and OS2 alignment.
Takers: Danish municipalities, clusters, and potentially international partners.
End users: Regions seeking structured climate insights.
Scale: Potential adoption by at least 5 municipalities within 3 years.
When: Mature prototype ready by end of project period, reuse expected shortly thereafter.

2 Pilot solution(s)

2.1 What has your pilot accomplished?

We are particularly proud that the Do Data pilot not only demonstrated how existing climate data can be reused to create new value but also helped stimulate national interest in strengthening climate data services for businesses. Through our dialogue with the Danish Business Authority about smarter use of data, including insights from Climate Compass, the pilot contributed to renewed focus on developing and optimising Climate Compass as a service for the business sector.

The pilot also opened new opportunities for collaboration with national actors. We engaged in dialogue with the Confederation of Danish Industry (Dansk Industri), which has developed an open learning tool that helps companies understand and use Climate Compass effectively. This alignment of goals creates promising opportunities for future partnership, where municipal insights

from Do Data and national training initiatives could reinforce each other and support even broader business adoption of climate accounting.

At the organisational level, the pilot created shared understanding across municipal departments, businesses, and researchers of how climate data can support better decision making. Technically, it produced a prototype capable of securely importing, anonymising, and visualising company level Climate Compass data based on a scalable open-source architecture. This allowed Vejle to generate aggregated insights into business emissions for the first time without compromising confidentiality.

Ethically and juridically, the project established clear governance practices for handling private sector data, including consent, purpose limitation, and data minimisation, creating a stronger foundation of trust between the municipality and local companies.

The Danish Ministry of Digital Affairs followed the pilot closely, and through Vejle's participation in the Danish Data Space Forum (DDSF), the project clearly illustrated the wider societal value and concrete gains that arise from cross sector data collaboration. This positions Do Data - for a Greener Future as a clear and practical example of how shared data can strengthen local climate governance while also contributing to the foundations of emerging national climate data ecosystems.

2.2 What is (are) the concrete solution(s) developed?

The Do Data – for a Greener Future prototype addresses a central challenge for municipalities and businesses: the lack of accessible, consistent, and actionable insights into company level CO2 emissions. While thousands of Danish companies have completed Climate Compass calculations, these data have not previously been available in a form that supports local benchmarking, municipal planning, or meaningful dialogue between companies and the public sector.

The solution is an open-source digital tool that imports, validates, and visualises Climate Compass data submitted voluntarily by local businesses. The tool enriches these data with selected open energy datasets and municipal information and transforms them into intuitive visual insights that help companies understand their energy related emissions and identify potential areas for improvement.

For the municipality, the tool provides aggregated and anonymised overviews of business-related emissions, enabling a better understanding of the local business sector's climate impact and supporting targeted climate planning. The solution is designed with strict privacy safeguards, including data minimisation, purpose limitation, and a governance model that prevents visibility of identifiable company data.

The prototype consists of three main components:

- A secure data ingestion and validation flow for Climate Compass files.

- A visual analytics module presenting company dashboards, trends, and benchmarks.
- An aggregated municipal overview that offers strategic insights without exposing individual companies.

Built on open standards and open-source principles, the architecture ensures scalability and future integration with OS2 collaboration, Climate Compass extensions, or an intermunicipal climate data space.

2.3 How was it developed?

The development of Do Data – for a Greener Future involved close collaboration between Vejle Municipality, Vejle Erhverv, and the Alexandra Institute as the technical development partner. Internally, Vejle contributed domain knowledge on climate planning, municipal data governance, and business engagement, ensuring that the solution addressed real needs and could fit into existing practices. Externally, Alexandra provided specialised expertise in data architecture, data spaces, digital infrastructures, and privacy-preserving design.

The development process combined technical and organisational steps. It began with dialogue with local companies, municipal departments, and national stakeholders to understand data needs and challenges. Surveys were used to gather insights into businesses' climate maturity, their use of Climate Compass, and their expectations for digital climate tools. Continuous dialogue with the Danish Business Authority, the Danish Ministry of Digital Affairs, Confederation of Danish Industry, and the Danish Data Space Forum further shaped the direction and requirements of the solution.

Technically, the prototype was built using open-source components and standardised data formats to ensure scalability and potential integration with future OS2-based services. Core elements included secure data ingestion pipelines for Climate Compass exports, validation logic, and a visualisation layer capable of presenting both company dashboards and aggregated municipal insights. Throughout development, the team prioritised interoperability, documentation, and strict privacy compliance, demonstrating how municipal and private sector climate data can be reused safely and effectively across sectors.

2.4 When was it (or will it be) fully achieved?

The MVP and proof of concept are to be completed at the **end of December 2025**, demonstrating the core capabilities of Do Data: secure ingestion of Climate Compass data, anonymised aggregation, and visual dashboards for both companies and the municipality. Once the MVP is delivered, the next phase of development will depend on which strategic pathway is prioritised. Three potential directions have already emerged, each with its own timeline.

Pathway 1: Continued development in partnership with DigitalLead

If a collaboration with DigitalLead is established, the focus would be on strengthening the technical foundation and preparing the solution for scaling across business clusters and municipal networks.

Timeline:

- Q1–Q2 2026: Joint scoping, refinement of MVP features, expanded user testing.
- Q3–Q4 2026: Development of advanced benchmarking, onboarding flows, and extended data integrations.
- Early 2027: Release of version 1.0 for broader industry and municipal use.

Pathway 2: Integration with OS2 as a shared municipal module

If OS2 becomes the primary route, the next step would be to align the solution with OS2 governance, licensing, and architectural practices.

Timeline:

- Q1 2026: OS2 feasibility assessment and alignment workshops.
- Q2–Q3 2026: Technical adaptation to OS2 standards and shared documentation.
- Late 2026: Pilot testing in two to three additional municipalities.
- Early 2027: OS2 release as a reusable municipal climate monitoring module.

Pathway 3: Integration into the national Climate Compass ecosystem

If national partners choose to explore integration, the focus would be on embedding Do Data insights directly into future versions of Climate Compass.

Timeline:

- Q1–Q2 2026: Co-design sessions with Erhvervsstyrelsen.
- Q3 2026: Development of shared APIs, export standards, and visualisation components.
- Late 2026–2027: Gradual integration into Climate Compass as optional analytics features.

Each pathway builds on the completed MVP and positions Do Data – for a Greener Future as a flexible, scalable platform ready to support municipalities, companies, and national climate data infrastructures.

2.5 By who or what organisation(s) will your solution be taken up?

The solution is designed for use by several types of users across the municipality, the business community, and the wider Danish business support system. Within Vejle Municipality, climate planners, digitalisation specialists, business service advisors, and analysts are expected to use the aggregated dashboards to support climate strategy, internal reporting, and dialogue with local companies. Their use will increase as the solution matures and becomes integrated into existing workflows.

From the business community, sustainability coordinators, energy managers, and owners of small and medium sized enterprises will use the company level dashboards to interpret their Climate Compass results and explore potential climate actions. Their usage will typically peak after submitting new Climate Compass data or when assessing investments, documenting climate performance, or planning green transition activities.

Actors from the national business support system, including local business service units and relevant organisations within Denmark's Business Promotion and Innovation system[4], can use the tool to better guide companies in understanding their emissions and choosing effective climate actions. The tool also offers new opportunities for coordinated climate services across municipal and national business support actors.

National stakeholders such as Danish Business Authority, DigitalLead, OS2 representatives, and industry organisations may use the solution periodically to explore scaling potential, standardisation needs, or integration into national digital tools.

Throughout the pilot, we worked actively to prepare these user groups. This included continuous dialogue with businesses, surveys to understand needs, demonstrations for municipal departments, and discussions with national agencies, clusters, and the business support ecosystem. These activities ensured that the prototype reflects real world practices and laid the foundation for future adoption, onboarding, and training as the solution develops further.

2.6 How will your solution live on after the end of the project?

The solution will continue to be used as a foundation for generating climate insights for both companies and the municipality, supported by the completed MVP and proof of concept. In the near future, development will focus on strengthening data ingestion, refining dashboards, and preparing the solution for broader adoption. Several pathways for upscaling are already emerging (see 2.4). These include continued development in potential partnership with DigitalLead, alignment with OS2 for use across Danish municipalities, or integration of selected Do Data features into the national Climate Compass. Each pathway offers significant potential for further development, including expansion to additional climate domains and future inclusion in intermunicipal climate data spaces.

[4] Erhvervsfremmesystem, Erhvervsfremmebestyrelsen and Erhvervshusene