

Duvel Moortgat Sustainability Data Platform

Stageproject Plan

A.C.A.
Group



Presented by: Kyano Trevisan

Good Morning everyone.

My name is Kyano Trevisan, and I am a data engineer intern at ACA Group

Today I will be presenting an update on my work on the Duvel Moortgat Sustainability Data Platform project

This project is focused on building a robust data infrastructure to support Duvel's sustainability reporting needs.



Duvel Moortgat has established sustainability as a core strategic priority, driving the need for comprehensive data management solutions

The Sustainathon 2025 project represents a collaborative initiative to integrate sustainable practices into operations through robust data infrastructure and automated reporting capabilities

Our primary objective was to transform manual, error-prone sustainability reporting processes into an automated, scalable system that ensures accuracy and regulatory compliance

This transformation directly supports Duvel's compliance with the Corporate Sustainability Reporting Directive (CSRD), a critical EU regulation that I will detail on the following slide

The Importance of CSRD



Corporate Sustainability Reporting Directive is a EU directive

CSRD mandates reporting on environmental and social impact

This requires detailed reporting on a wide range of factors

The goal of CSRD is transparency and accountability

Understanding the Corporate Sustainability Reporting Directive (CSRD) is fundamental to appreciating the business value and technical requirements of our project

CSRD represents landmark EU legislation that mandates comprehensive sustainability disclosures for companies operating within the European market

The directive requires organizations to publish detailed reports encompassing environmental impact, social responsibility, and governance practices, including quantifiable metrics on emissions, resource consumption, labor standards, and ethical business conduct

This regulatory framework encompasses complex data requirements covering emissions tracking, resource utilization, labor practices, and ethical governance standards

By enforcing standardized transparency requirements, the EU enables stakeholders—including investors, customers, and regulatory bodies—to make data-driven decisions while holding companies accountable for their sustainability performance

Project Team

Data Engineer



Data Analyst



The Sustainathon project required a multidisciplinary approach, leveraging complementary technical expertise to deliver a comprehensive data solution

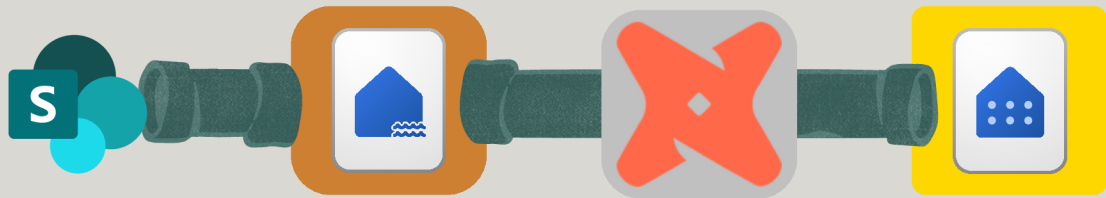
As the data engineer, I was responsible for architecting and implementing the technical infrastructure that powers Duvel's sustainability reporting ecosystem

My core responsibilities included designing scalable data pipelines, developing robust transformation logic, implementing data quality controls, and ensuring system reliability and performance optimization

These technical implementations involved creating automated data integration workflows, writing optimized transformation code using dbt, and establishing comprehensive monitoring and validation systems

My colleague Fabian, serving as the data analyst, focused on the analytical layer, transforming processed data into actionable insights through sophisticated reports and interactive visualizations that enable stakeholders to understand and act on sustainability metrics

Key Realizations



A fundamental achievement of this project was architecting and implementing a comprehensive data pipeline infrastructure that automates Duvel's entire sustainability reporting workflow

The solution consists of two specialized pipelines working in concert to ensure reliable, scalable data processing

The Integration Pipeline orchestrates data ingestion from multiple sources, automatically retrieving Excel-based input sheets from SharePoint, extracting relevant datasets, and converting them into optimized Delta tables for high-performance analytics

Raw data is systematically stored in our Data Lakehouse Bronze layer, establishing a reliable foundation for all downstream processing while maintaining data lineage and audit capabilities

The Transformation Pipeline handles sophisticated data processing and refinement, leveraging dbt (data build tool) code stored in our Azure DevOps Git repository to ensure version control and collaborative development

Security protocols are integrated throughout, with the pipeline automatically retrieving access credentials from Azure Key Vault, ensuring enterprise-grade security without compromising automation efficiency

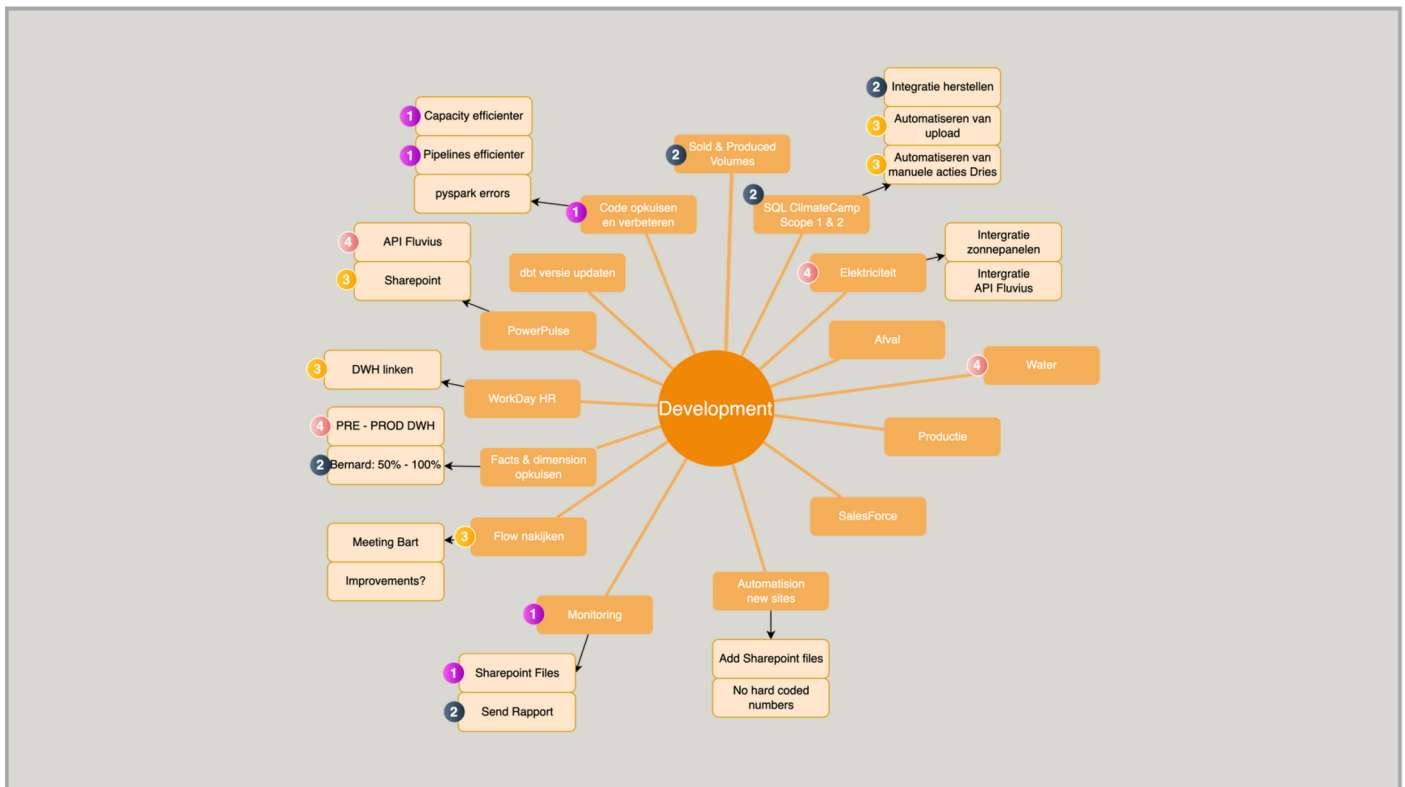
The transformation process converts raw Bronze layer data into business-ready Silver layer datasets, applying complex business rules, data quality validations, and sustainability-specific

calculations required for CSRD compliance

The transformation pipeline culminates by persisting fully processed, analysis-ready datasets in our dedicated Gold layer data warehouse

This Gold layer represents the single source of truth for Duvel's sustainability reporting, containing clean, validated, and business-logic-compliant data that directly feeds into CSRD compliance reports, executive dashboards, and strategic decision-making processes

This medallion architecture (Bronze → Silver → Gold) ensures data quality, enables incremental processing, and provides clear data lineage from source systems to final reports



This development roadmap visualizes the comprehensive scope and strategic prioritization of technical deliverables within the Sustanathon project

Development represents the core technical workstream, encompassing my primary responsibilities as the data engineer

Key development areas include integrations for automated data sourcing, pipeline optimization for enhanced performance and reliability, and enterprise system integrations including WorkDay HR data and external sustainability platforms

The numerical prioritization system (1 = highest priority) reflects business impact and technical dependencies, ensuring critical CSRD compliance requirements were addressed first, followed by performance optimizations and advanced features

This structured approach enabled us to deliver 41 completed project tasks, covering all major sustainability reporting requirements while maintaining system reliability and performance standards

Technology Stack: Powering The Project

01

Microsoft Fabric



02

pySpark



03

dbt



Our technology architecture leverages industry-leading platforms to deliver enterprise-grade sustainability reporting capabilities

Microsoft Fabric serves as our unified data platform, providing integrated data engineering, analytics, and governance capabilities that eliminate the complexity of managing multiple disparate systems

Within the Fabric ecosystem, I utilize Notebooks and PySpark for large-scale data extraction, complex transformations, and performance-optimized processing of sustainability data from diverse source systems

dbt (Data Build Tool) powers our transformation layer, enabling version-controlled, testable, and documented data modeling that ensures consistent business logic application and maintains data quality standards across all sustainability metrics

Power BI provides the visualization and reporting interface, delivering interactive dashboards and automated reports that enable stakeholders to monitor sustainability performance, track CSRD compliance metrics, and make data-driven strategic decisions

Project Impact: Enhancing CSRD Reporting



The Sustainathon project delivers measurable, transformative impact across Duvel Moortgat's sustainability operations and strategic decision-making capabilities

Regulatory Compliance: By implementing automated data validation and standardized reporting processes, we ensure Duvel's CSRD reports meet stringent EU regulatory requirements while maintaining data integrity and auditability

Operational Efficiency: The platform processes data from facilities across 9 countries (Belgium, Netherlands, France, UK, Spain, Italy, Czech Republic, China, and United States), providing visibility into sustainability metrics that previously required weeks of manual compilation

Strategic Transparency: Enhanced data accuracy and automated reporting capabilities enable stakeholders—including investors, regulatory bodies, and customers—to access reliable, up-to-date sustainability performance metrics, strengthening Duvel's market position and stakeholder trust

Data-Driven Decision Making: By eliminating manual processes and providing automated insights, we empower Duvel's leadership team to make strategic sustainability investments based on accurate, real-time data rather than outdated, manually-compiled reports

Quantifiable Results: Reduced ClimateCamp integration time from days to hours, eliminated 253+ lines of hardcoded elements from a single model alone, and achieved 20% improvement in system efficiency

Thank You!

Kyano Trevisan

Thank you for your attention. I welcome any questions about the technical implementation, business impact, or future development opportunities for this sustainability data platform.