# AI Proposal for VERSO

## AI Vision

The goal of this proposal is to enable VERSO to unlock the full potential of artificial intelligence to scale its impact in the ESG and sustainability space. By integrating AI into core workflows, VERSO can enhance its product offering, automate manual processes, and provide intelligent, real-time guidance to clients navigating complex regulatory environments.

This strategy focuses on:

- Empowering users with instant access to reliable ESG knowledge,
- Driving better decisions through explainable forecasts and simulations,
- Automating compliance workflows to save time and reduce risk.

## Key AI Use Cases

1. Sustainability Copilot

An LLM-powered assistant that supports employees across the organization by answering ESG-related questions with full traceability, legal context, and price impact summaries.

Key Capabilities:

- Answer Team Questions in Natural Language
  Example: “Do we need to report Scope 3 emissions under CSRD?” → The Copilot gives a clear, concise, and accurate answer using company-specific ESG context + regulation.
- Provide the Source of the Answer
  Includes citations and links to:
  - CSRD, SFDR, GRI regulations
  - Internal ESG documentation
  - Source versioning and audit metadata
- State the Legal Policies & Scope
  Example Output:
  Policy: CSRD Directive
  Applies to: Companies with >250 employees or €40M+ turnover
  Scope: Environmental (E), Social (S), Governance (G)
  Required: Scopes 1–3, risks, targets, mitigation plans
- Push Actions or Alerts
  → Triggers notifications or creates tasks (e.g., in Jira/Notion) when:
  - Regulation changes
  - Deadlines approach
  - ESG data is missing or outdated

---

2. Sustainability Score Simulator

A forecasting tool that predicts future ESG scores based on current company data and shows exactly what needs to be changed to improve performance.

Key Features:

- See the Results They Have
  Pulls and displays ESG KPIs like emissions, energy use, supplier scores, DEI metrics, and waste across E/S/G dimensions.
- Predict How It Will Be in the Future
  Forecasts 12–36 month ESG score trajectory using:
  - Time series models
  - Sector trends
  - Regulation impact
- What Do They Need to Change
  Identifies:
  - Score-draining factors (e.g., Scope 3 emissions, lack of supplier audits)
  - Key blockers to CSRD alignment
- Recommendations – What to Change and How
  Delivers:
  - Ranked improvements by ESG impact and cost
  - Estimated timelines
  - Quick wins vs long-term ROI changes
- Score Decomposition Timeline
  Visual history of:
  - Score increases/drops
  - Related decisions or missed actions

---

3. Document Intelligence for ESG Extraction

A document analysis pipeline that extracts ESG-relevant information from unstructured sources like PDFs, Word files, or supplier forms, and turns it into structured, usable data.

Key Features:

- Document Ingestion
  Supports scanned PDFs, native PDFs, Word docs, Excel, images
- Information Extraction
  Extracts:
  - Emissions (Scope 1- 3)

    - Water/waste data
    - Certifications
    - Policy statements
- Document Tagging + Classification
  Categorizes documents by ESG topic, supplier, date, and legal relevance
- Structured Output
  Converts raw data into JSON or CSV formats, ready for dashboards, reports, or model input
- Integration with Score Simulator
  Automatically feeds extracted metrics into the score simulator pipeline for real-time updates

**Architecture & Tooling Stack**

Model Layer

- Primary LLM: GPT-4o via Azure OpenAI (secure + compliant)
- Alternative LLMs (self-hosted/local but the result will not be as good as with chatgpt4o):
    - Mistral 7B (EU-hosted)
    - Falcon (German/Swiss options)
    - Llama-3 variants via Llama.cpp for local inference

Data Layer

- Storage: Azure Blob Storage (structured + unstructured ESG data)
- Document Parsing: Azure Form Recognizer, Unstructured.io (EU-hosted version)
- Vector Search: FAISS or Weaviate for embedding-based retrieval

Dev Stack

- IDE: VS Code
- Package Manager: Poetry
- Environment: Azure DevOps (CI/CD, Secrets, Containers)
- Prompt + Retrieval Frameworks: LangChain, LangGraph

Security + Compliance

- Models hosted in EU regions only (Azure West Europe, Germany, France)
- GDPR-ready storage policies and data minimization for audit logs
- All APIs routed through Azure API Management Gateway
- Identity management with Azure AD + Key Vault

**Note:** This document is a simulation of potential AI use cases and an indicative technology stack tailored to VERSO's positioning in the ESG and sustainability space. It is not a complete AI strategy. A comprehensive AI strategy would require in-depth access to internal processes, data flows, user journeys, and business priorities. These insights are essential to accurately assess how AI can generate measurable value, identify automation opportunities, and ensure compliance.

To create a full roadmap, I would typically suggest:

- Discovery workshops with product, engineering, and sustainability teams
- A review of current data infrastructure, documentation, and tooling
- User interviews to understand pain points and unmet needs
- Alignment with VERSO's product and growth strategy

With this foundation, we could then build a targeted, phased AI roadmap with actionable use cases, prioritized rollouts, and defined KPIs

Adelajda Papa