C5i is a global AI and analytics firm that uses data intelligence to drive smarter business decisions. Its sustainability analytics for manufacturers leverages artificial intelligence (AI) to address climate-related challenges and help reduce supply-chain emissions.

At C5i, I led a project to build **3 Python-based** tools that help global manufacturers cut emissions and improve efficiency. C5i now aims to provide these tools to its **multinational clients** as part of their sustainability portfolio to help them reduce supply-chain emissions.

● Factory Energy Evaluation Tool: Built a data-driven framework that compares regional grid costs and carbon intensity to model renewable energy options, enabling companies to identify the most cost-effective, low-emission renewable energy source for daily operations.

● Supplier Emissions Pareto Analysis: Developed a Pareto-based analyzer that processes supply-chain data to rank suppliers by carbon footprint, allowing companies to identify the top 20% of suppliers responsible for 80% of emissions.

● What-If Simulator: Programmed a simulation engine that lets companies test scenarios such as factory relocation, transportation route changes, or packaging shifts to visualize cost–emission trade-offs and plan smarter transitions.

These tools can help manufacturers reduce supply-chain emissions by 8–15% and lower energy costs by 10–15%, contributing to more sustainable, data-driven industrial operations worldwide.

On this website, I have attached sample codes to demonstrate how these tools would work using sample datasets.