

Erik Emilsson

Data Analytics & Sustainability Engineering Professional

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Professional Summary

Highly analytical and results-oriented data professional with 6+ years of experience transforming complex environmental and supply chain data into strategic business decisions. Proven expertise in Power BI, Python, Microsoft Fabric, and SQL, with a strong track record in data warehousing, ETL processes, and optimization modeling. Microsoft certified in Power BI Data Analysis and Fabric Analytics Engineering. Specialized in sustainability analytics, supply chain optimization, and critical materials risk assessment for automotive, energy, and manufacturing sectors.

Professional Experience

Project Leader and Sustainability Analyst

IVL Swedish Environmental Research Institute

August 2018 - Present | Göteborg, Sweden

- Led and collaborated in **30+ consultancy and research projects** with budgets up to 2,000,000 SEK, delivering valuable insights and recommendations for clients and stakeholders
- Analyzed complex supply chain data, identifying resource flow bottlenecks and optimization opportunities for **lithium-ion batteries and rare earth magnets**
- Utilized advanced analytical tools including **Power BI, Python, GaBi, and Excel** to model supply chains, analyze complex datasets, and visualize insights for data-driven research
- Authored a battery production CO₂ emissions review update (**21,500 downloads and 114 citations**), demonstrating a 47-59% reduction in CO₂ emissions

- Organized and presented at **10+ industry events**, effectively communicating complex data insights to diverse stakeholders
- Coordinated cross-functional teams and mentored junior staff, aligning data-driven project objectives and fostering collaboration

Sustainability Consultant

Multinational Automotive Manufacturer | External consultant through IVL

August 2018 - Present | Göteborg, Sweden

- Drove sustainability initiatives and corporate regulatory compliance by ensuring adherence to the **EU ELV Directive, REACH, and Battery Regulation**
- Collected and managed data (Material Safety Data Sheets) from **100+ suppliers** for company material database
- Delivered data-driven insights and recommendations through **LCAs and BI reporting**, aiding compliance with new regulations
- Automated **ETL processes**, integrating data from SharePoint, OneDrive, open-source systems, and company databases to streamline workflows
- Facilitated cross-departmental collaboration for **critical raw materials** (economic vulnerability and supply risk) and ESG-hotspots for electromobility

Technical Skills

DATA ANALYTICS & BI

Microsoft Power BI (Expert), DAX, Power Query (M), Tableau, Excel Advanced Analytics

PROGRAMMING & DATA SCIENCE

Python (Pandas, NumPy, PuLP, Plotly), R, SQL (T-SQL, PostgreSQL, MySQL), KQL, PySpark

CLOUD & DATA ENGINEERING

Microsoft Fabric, Azure SQL Database, Azure Data Factory, Data Warehousing, ETL Pipelines, OneLake

DOMAIN EXPERTISE

Lifecycle Assessment (LCA), Supply Chain Optimization, Geospatial Analysis, Critical Materials Risk Assessment

Key Projects

European Battery Recycling Optimization (ELiMINATE Project)

- Developed Python optimization model identifying €430M+ in potential cost savings through optimal facility placement and technology selection

- Analyzed 98,667 annual tonnes battery recycling capacity across 27 EU countries
- Built Power BI dashboard for competitor capacity analysis and geographic clustering
- Created interactive Plotly visualizations (Sankey diagrams, geographic maps) to showcase material flow and network efficiency

OEM Material Insights: ESG Analytics Platform

- Built integrated ESG analytics platform on Microsoft Fabric connecting procurement systems with global material databases
- Implemented medallion architecture (Bronze/Silver/Gold layers) with incremental loading strategies
- Developed dual Power BI dashboards (public transparency vs. internal analytics) with advanced DAX measures
- Automated ETL pipelines processing data from Azure SQL, SharePoint, and external APIs

Critical Raw Materials Dashboard

- Led 6-year initiative to develop centralized Power BI dashboard unifying critical raw materials data from multiple sources
- Collaborated with Supply Chain, Purchasing, and IT teams to reduce data complexity and improve decision-making
- Enhanced compliance with regulations and streamlined supply chain management for automotive manufacturer

Certifications

Microsoft Certified: Fabric Data Engineer Associate (DP-700)

Microsoft Certified: Fabric Analytics Engineer Associate (DP-600)

Microsoft Certified: Power BI Data Analyst Associate (PL-300)

Microsoft Certified: Azure AI Fundamentals (AI-900)

Microsoft Certified: Azure Fundamentals (AZ-900)

Google Data Analytics Professional Certificate

Education

M.Sc. Applied Physics & B.Sc. Chemical Engineering with Engineering Physics

Chalmers University of Technology | Gothenburg, Sweden | Graduated April 2018

Selected Publications

- **Lithium-Ion Vehicle Battery Production - Status 2019** (21,500 downloads, 114 citations) - IVL Swedish Environmental Research Institute, 2019
 - **Batteries in the Nordics – Charging for circularity** - Nordic Council of Ministers, 2022
 - **Flows of Secondary Critical Raw Materials in the Swedish Technosphere** - Swedish EPA, 2023
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References available upon request | Portfolio: erikemilsson.com