

ABHIJITH SIVAPRASADAN

M.Sc. Sustainable Energy Engineering (KTH, 2026) | Energy Management | ISO 50001 | Data Analysis
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PROFILE

Energy engineer completing an M.Sc. in Sustainable Energy Engineering at KTH, with direct experience applying ISO 50001 and EED-aligned energy performance methodology at Alleima AB. My internship involved designing KPI and EnPI frameworks, assessing measurement and data readiness across industrial sites, and developing Python workflows to identify energy loss mechanisms and anomalies in process data. My academic background covers energy systems modelling, building energy analysis, renewable energy integration, and energy policy. I am motivated by the challenge of translating energy data into actionable decisions and I am actively studying Swedish.

EXPERIENCE

Energy Efficiency Intern

Alleima AB, Sandviken (Remote)

Dec 2024 - Jun 2025

- Developed an ISO 50001 and EU Energy Efficiency Directive (EED)-aligned energy performance mapping methodology for industrial sites. Defined energy performance indicators (EnPIs), KPIs, and load driver normalization logic to enable fair comparison of energy consumption across operating states and sites.
- Assessed measurement and data readiness across sites: identified required signals, evaluated existing metering infrastructure, and produced a structured measurement plan specifying sampling requirements and baseline conditions for reliable long-term follow-up.
- Developed Python analytical workflows to compare operating states, identify loss mechanisms and anomalies in energy data, and classify findings by magnitude and addressability. Delivered a structured improvement roadmap covering utilities, process heat, compressed air, and heat recovery.
- Produced technical documentation of methodology, assumptions, and recommendations structured for use in management reviews and investment decision support. Reported findings clearly to stakeholders across functions.

Master Thesis Student / Contract Test Engineer

Siemens Energy AB, Fluid Dynamic Lab, Finspång

Apr 2025 - Nov 2025

- Conducted numerical investigation of thermo-fluid performance in gas turbine test hardware. Managed independent project scope, documentation, and reporting. Developed Python post-processing scripts for automated data extraction, KPI computation, and results comparison across simulation cases.
- Experimental phase: commissioned NI-DAQ measurement chains, ran high-temperature test campaigns, and conducted formal root cause analysis of hardware failure with documented findings.

Backend Engineer

QBurst, Thiruvananthapuram, India

Sep 2021 - Jun 2023

- Developed APIs and automated test workflows in Python and TypeScript. Strong transferable skills in data pipeline development, structured documentation, version control, and systematic reporting.
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RELEVANT PROJECTS

Hylkisaari Smart Energy Island Modelling

KTH Course Project (IDA ICE, HOMER Pro)

2024

- Modelled building energy demand, PV generation, battery storage, and heat pump scenarios for a near-zero energy island concept. Built KPI framework covering autonomy, self-consumption, and techno-economics. Evaluated performance across BAU and renewable-plus-storage scenarios. Directly relevant to Hemsö's solar monitoring and property energy performance tracking work.

Heating Dispatch Optimisation - MILP

KTH Course Project (Python, PuLP)

2025

- Implemented annual heat supply dispatch optimisation covering CHP, heat pump, and thermal storage. Implemented cost-based and emissions-based objectives and compared seasonal dispatch outcomes. Relevant to energy cost analysis and reduction goal-setting.

Residential Heating Techno-Economic Comparison

KTH Course Project (IDA ICE, SAM)

2025

- Compared district heating, PV with heat pump, and solar thermal with TES configurations using hourly demand and irradiance data. Built CAPEX/OPEX/LCOE/payback KPIs with sensitivity analysis. Applied energy system reasoning to support investment decisions.

Germany Energy-Environment-Economy Analysis

KTH Course Project (LEAP)

2024

- Structured analysis of Germany's energy transition pathways using LEAP modelling tool. Evaluated electricity cost and carbon implications across technology scenarios. Relevant to EPBD and EKL regulatory context and energy policy analysis.

ML Heating Demand Forecasting

KTH Course Project (Python, scikit-learn)

2025

- Built day-ahead heat demand prediction model achieving 93.7% accuracy. Applied feature engineering, time-series analysis, and error decomposition. Relevant to energy data monitoring, deviation detection, and performance follow-up workflows.

EDUCATION

M.Sc. in Sustainable Energy Engineering (expected 2026)

KTH Royal Institute of Technology, Stockholm

2023 - 2026

Relevant coursework: Energy Management (MJ2511, ISO 50001, KPI design, measurement and verification), Energy in the Built Environment (MJ2509), Renewable Energy Technology (MJ2411, grade B), Energy Systems for Sustainable Development (MJ2508), Sustainable Power Generation (MJ2405), AI Applications in Sustainable Energy Engineering (MJ2507, grade A), Practical Optimization of Energy Networks (MJ2505), Modeling of Energy Systems (MJ2438).

B.Tech in Mechanical Engineering

APJ Abdul Kalam Technological University, Kerala, India

2017 - 2021

Relevant coursework: Thermodynamics, Heat and Mass Transfer, Industrial Engineering, Advanced Energy Engineering.

TECHNICAL SKILLS

Energy management:	ISO 50001, EU EED, EnPI and KPI design, load driver normalization, measurement and verification, energy audit methodology, improvement roadmap development
Energy modelling:	IDA ICE, HOMER Pro, LEAP, SAM (Solar Advisor Model). Building energy demand modelling, PV and storage system sizing, techno-economic analysis.
Data analysis:	Python (pandas, NumPy, SciPy, matplotlib, scikit-learn, PuLP), MATLAB, time-series analysis, anomaly detection, automated reporting workflows
Regulatory context:	ISO 50001, EU EED, EPBD awareness (from coursework). Energy tax and solar installation documentation: coursework-level familiarity, motivated to develop.
Other tools:	Git, MS Office, NI-DAQ, LabVIEW, ANSYS Fluent

CERTIFICATIONS

SSG Entre / Industrial Safety (valid Jan 2025 - Jan 2028) | Schneider Electric - Assessing a Commercial Product's Sustainability (Jun 2024) | IBM Python for Data Science | Digital Manufacturing and Design Technology (University at Buffalo)

LANGUAGES

English: professional proficiency | Swedish: beginner, actively studying | Malayalam: native