Preethiviraj Murugesan
7, Hatcher Crescent, CO2 8JL, Colchester, UK.
preethivirajmurugesan@gmail.com
+44(0)7760369593
linkedin.com/in/preethiviraj-murugesan-161058164

Professional Summary:

Dynamic Solar Design Engineer with 3 years of proven success in delivering high-performance PV systems (up to 50 MW), BESS solutions, and commercial rooftop installations. Engineered efficient layouts using PVCase, PVsyst, AutoCAD, and Excel-based tools for precise PR calculations and yield modelling. Leveraged HH data to tailor self-consumption systems and maximize energy efficiency. Delivered 10+ utility-scale and 20+ commercial projects, including high-profile clients such as Tesco and David Lloyd. Holds a mechanical engineering background with a strong focus on clean energy innovation.

Summary of Skills:

- Solar PV layout design using PVCase and AutoCAD
- Energy yield modelling and performance simulation using PVsyst and PVSol
- Battery Energy Storage System (BESS) design and analysis
- Excel tools for PR calculations, system sizing, and energy simulations
- Feasibility and detailed analysis using HH (half-hourly) data
- Mechanical and piping design (AutoCAD, SolidWorks, CATIA, PDMS)
- Piping stress analysis using CAESAR II
- Project scheduling with Primavera; basic automation with Python
- Effective collaboration with procurement, clients, and engineering teams

---

Professional Experience:

Solar Design Engineer – Push Power, Colchester, UK
Oct 2022 – Present
Software: PVCase, PVsyst, PVSol, AutoCAD, HomerPro, Excel

- Conducted 100+ feasibility studies with half-hourly data analysis to optimize PV systems for maximum self-consumption and cost savings.
- Designed 20+ commercial rooftop PV systems (10 David Lloyd and 3 Tesco projects), achieving an average Performance Ratio (PR) exceeding 85%.
- Spearheaded the design of 10+ utility-scale ground-mount PV systems (500 kW to 50 MW), orchestrating layout development in PVCase and executing performance simulations in PVsyst to ensure optimal energy yield and site efficiency.
- Developed Excel tools for PR tracking, yield estimation, and BESS performance modelling, achieving up to 50% reduction in time spent on PV string length design and improving decision-making efficiency for sizing and layout selection.
- Recognized for improving design efficiency, promoted to lead feasibility studies and mentor junior designers after 6 months.
- Performed inverter sizing, import/export evaluation, and load-matching to enhance project ROI.

- Utilized HOMER Pro to simulate hybrid energy systems and assess the feasibility of solar-plus-storage configurations for both on-grid and off-grid applications.
- Crafted compelling proposal documentation and produced precise technical drawings that secured multiple successful tender submissions.
- Expanded responsibilities to include modelling PPA-based financial scenarios, helping clients and stakeholders evaluate ROI, IRR, and savings potential.
- Collaborated with clients, procurement teams, and engineers to align design output with project goals.

Mechanical Site Engineer – Khalid Ali Al Kharafi, Kuwait
Dec 2018 – Dec 2019

- Supervised fabrication and erection of six storage tanks, ensuring adherence to quality and safety standards.
- Coordinated with suppliers and teams on material flow, reporting, and daily progress tracking.

Graduate Apprentice – Design Engineer – Bharat Heavy Electricals Ltd. (BHEL), India
Sept 2017 – Sept 2018

- Created isometric drawings from P&IDs using AutoCAD and PDMS.
- Prepared BOMs and IBR documentation; performed pipe stress analysis in CAESAR II.

Mechanical Site Supervisor – Maruti Fabricators, India
July 2016 – Aug 2017

- Supervised duct and structural steel fabrication for thermal power plant installations.
- Produced fabrication drawings using AutoCAD and SolidWorks.

Education

MSc – Renewable Energy – Coventry University, UK
Jan 2021 – Jan 2022
Key Modules: Solar, Wind, Hydro, and Bio-Energy Systems
Thesis: *Design and Evaluation of a Solar-powered Irrigation System using PVsyst*

BE – Mechanical Engineering – Anna University, India
Sept 2012 – June 2016
Project: *Alternate Welding Method for Dished End of OTSC Boiler Separator*

Certifications & Training

- AutoCAD Level 1 – Autodesk Authorized Training Centre
- NEBOSH International General Certificate (IG1 & IG2) – Completed
- Certified Rooftop Solar Operative – Includes Working at Height & Rescue Training
- In-house electrical design training
- Product and design tool training from Huawei, RatedPower, and SolarEdge
- CPD Certified: Work at Height Awareness, COSHH Awareness
- Fire Warden & Basic First Aid Certified
- UK Flyer ID Certified – Completed drone operator training for safe flight in compliance with CAA regulations