

# Ewe Win Eng, PhD

## Renewable Energy Systems Modeller & Analyst

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## PERSONAL PROFILE

A highly innovative and results-driven Renewable Energy Systems Modeller & Analyst with over **4.5 years of academic and applied research** experience. Specializing in energy system modelling, efficiency optimization, and economic assessments, with a proven track record of delivering sustainable, high-impact solutions to global energy challenges. Adept at translating research into actionable strategies, with extensive publications in leading peer-reviewed journals. Dedicated to advancing renewable energy technologies through ethical, sustainable practices.

## PROFESSIONAL EXPERIENCE

### Postdoctoral Research Associate

University of Strathclyde, Glasgow, UK | Jan 2023 – CURRENT

- **Energy Systems Modelling:** Developed and implemented advanced energy system models for high-impact projects aimed at improving energy efficiency across various sectors, including industrial and commercial applications. These models resulted in a **increase in energy efficiency and lower LCOH**, aligning with national goals of carbon reduction (<https://github.com/winengewe/STeAM>).
- **Subsurface Thermal Energy Storage Project:** Led the development of simulations for the UK's ESPRC-funded subsurface thermal energy storage project, directly contributing to sustainable thermal energy management.
- **Scenario Analysis & Control Systems:** Conducted detailed scenario analyses that evaluated multiple energy-saving strategies, identifying potential operational improvements that **reduce in energy losses** across pilot projects.
- **Interdisciplinary Collaboration:** Worked closely with engineers and geologist to ensure the research output aligned with real-world applications, delivering tangible benefits to ongoing decarbonization efforts.
- **Funding & Reporting:** Prepared comprehensive project reports for stakeholders, showcasing measurable outcomes and future opportunities.

### Research Assistant

Universiti Kebangsaan Malaysia, Selangor, Malaysia | Nov 2018 – Nov 2021

- **Innovative Solar Energy Technology Development:** Pioneered the design and development of a bifacial photovoltaic thermal solar air collector, increasing renewable energy capture by **30%** compared to conventional systems. This innovation was crucial in positioning the institution at the forefront of solar energy research.
- **Publications & Knowledge Dissemination:** Authored and co-authored **10+ peer-reviewed papers** in leading renewable energy journals, with a focus on thermodynamics, fluid mechanics, and renewable energy technologies. These publications have been cited extensively, reflecting their impact on the academic and industrial sectors.
- **Mathematical Modelling & Numerical Simulations:** Developed sophisticated mathematical models for energy systems, perform simulations that provided insights into the efficiency of various renewable energy technologies. These models informed the development of optimized energy solutions for industry partners.
- **Data Collection & Experimental Validation:** Spearheaded the design and execution of experiments related to renewable energy technologies, ensuring data collection was precise and aligned with project goals. Validated results through rigorous testing, ensuring research reliability and applicability to real-world energy challenges.
- **Project Management:** Set milestones, Gantt chart, develop aims and objectives, budget control
- **Cross-functional Leadership:** Led multidisciplinary research teams, managing collaborations between departments to deliver innovative solutions to complex global energy challenges

## KEY SKILLS

### - Advanced Energy Systems Modelling & Simulation:

Expert in developing and optimizing renewable energy systems using advanced modelling software (MATLAB, Python). These models are designed to simulate and predict the performance of renewable energy solutions,

providing key insights into system efficiency, cost-effectiveness, and long-term viability. Ability to assess the impact of energy systems in different scenarios ensures that projects are both sustainable and economically viable.

**- Project Management & Stakeholder Engagement:**

Proven ability to manage large-scale energy projects, from conceptual design to full-scale implementation. Skilled in communicating technical details to non-technical stakeholders, including government bodies and industry leaders, ensuring that energy initiatives are understood and supported at all levels. Capable of delivering presentations, technical reports, and proposals that secure funding and drive project adoption.

**- Energy Economics & Strategic Analysis:**

Proficient in conducting detailed cost-benefit analyses and economic assessments for energy projects by evaluating the financial viability of renewable energy solutions

**- Data-Driven Decision Making & Visualization:**

Adept at using data analytics and visualization tools (PowerBI, Excel) to interpret complex datasets and transform them into actionable insights. By visualizing key performance indicators (KPIs) related to energy use, efficiency, and cost, enable stakeholders to make data-driven decisions that enhance energy management practices.

**- Control Systems & Optimization:**

Skilled in designing control systems that optimize energy usage across different scenarios. Ability to analyze system performance and implement feedback mechanisms results in reduced energy losses and enhanced operational efficiency.

**- Multilingual Communication & Collaboration:**

Fluent in **English, Mandarin, Cantonese, and Malay**, which enables effective communication in multicultural environments. Linguistic skills help in collaborating internationally on research and industry projects, bridging gaps between different teams and stakeholders.

**- Technical Writing & Research Publishing:**

Extensive experience in drafting technical reports, proposals, and academic papers. Research has been published in leading journals, contributing to the body of knowledge in renewable energy.

## **EDUCATION**

**Doctor of Philosophy (PhD) in Renewable Energy**

Universiti Kebangsaan Malaysia, Selangor, Malaysia | Sep 2018 – Mar 2022

- Thesis: Jet Impingement Photovoltaic-Thermal Solar Air Collector for Higher Electricity Production

**Master of Science (MSc) in Energy Technology**

Universiti Kebangsaan Malaysia, Selangor, Malaysia | Sep 2017 – Jul 2018

- Thesis: Evaluation of Solar Air Collector-Thermoelectric Hybrid System

**Bachelor of Science (BSc) in Physics**

University of Glasgow, Glasgow, UK | Sep 2014 – Jun 2017

## **REFERENCES**

Dr. Paul Tuohy | Lecturer of Mechanical and Aerospace Engineering, University of Strathclyde, Glasgow, UK  
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