

## HIGHLIGHTS

- Masters in Renewable Energy Engineering with experience in Clean Energy Systems and Transition, Energy Modelling, Technoeconomic Assessment, and Project Management.
- Developed and managed energy performance datasets, aligning with key sustainability indicators for reporting and compliance insights in energy transition projects.

## EXPERIENCE

R&D Engineer – R&D Centre – Dubai Electricity and Water Authority Nov 2021 – Present

- Development of an in-house optimization model ensuring minute and hourly balance between demand and supply, maintaining system resiliency, and working on the user interface (UI).
- Conducting technoeconomic studies (levelized cost of energy (LCOE), life cycle assessment (LCA)) on different PV technologies (ground, floating, rooftop, agrivoltaics), CSP, wind, nuclear, gas power plants (with and without CCS), and storages (batteries, pumped hydro, hydrogen, ACAES, PCMs, etc.) for harsh desert environments using energy databases such as Bloomberg NEF, IRENA, IEA and Lazard.
- Demand profiles (non-cooling electric, cooling, water, hydrogen and industrial) assessment, renewable energy EV profiles creation.
- Consideration of Imports and Exports, reserve margins, CO<sub>2</sub> pricing, and emissions reduction pathways for the optimization model.
- Providing energy transition pathway recommendations and sustainability assessments to different internal and external partners.
- Writing and reviewing technical papers, presentations, feasibility studies, ESG assessments, knowledge-sharing sessions for knowledge dissemination.
- Supported team members in understanding complex energy modeling concepts during internal workshops and collaborative projects.

Research Intern – R&D Centre – Dubai Electricity and Water Authority Feb 2021 – Nov 2021

- Worked in Solar Decathlon Middle East (SDME) 2021 with the core infrastructure team.
- Global comparative assessment of energy benefit between bifacial and monofacial PV (with & without thermal regulation) modules.
- Multi-tilt assessment of different monofacial PV modules under harsh desert conditions.
- Energy yield assessment of Building Integrated Photovoltaics (BIPV) under different performance parameters (tilt, temperature, orientation, ventilation).

Akademie Operations Apprentice - TUV Nord ME Jan 2019 – July 2019

- Identifying training and development needs; planning, organizing, and overseeing appropriate training.
- Assisted energy auditors to conduct ISO based certifications (50001).

## ACADEMIC BACKGROUND

M.Sc. – Heriot Watt University, Dubai 2019-2020

- Major: Renewable Energy Engineering Cumulative GPA: 3.75/4.0

B.E. (Hons) – Birla Institute of Technology and Science (BITS) Pilani, Dubai 2015-2019

- Major: Mechanical Engineering Cumulative GPA: 8.13/10.0

## TECHNICAL SKILLS

- Modeling/Simulation – Levelized Cost Analysis, Marginal Cost of Electricity, NREL System Advisor Model (SAM), PV SYST, GlueViz, CATIA, AutoCAD, COMSOL.
- Programming - Python, Gurobi, Dashboard / UI creation using streamlit, MATLAB.

## CERTIFICATIONS

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1. *Certified Energy Manager (CEM), Feb 2025 (AEE)*
2. *Introduction to Artificial Intelligence and Machine Learning, 2023 (DEWA and NEONax)*

## RESEARCH PROJECTS

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- Time-resolved cost of electricity in future energy systems
  - Research Engineer, Dubai Electricity and Water Authority Jan 2023 – present
- Simulation and optimization of the electricity and broader energy system of Dubai under very high adoption of Renewable Energy
  - Associate Research Engineer, Dubai Electricity and Water Authority Jan 2021 – Dec 2022

## HONORS AND AWARDS

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- Recipient of Most Provocative award – Best Ideation Session 2021-2022 by Dubai Electricity and Water Authority.

## JOURNAL PUBLICATIONS

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1. *Realizing renewable resilience: Lessons for the Middle East for the global energy transition* (Cell - iScience) (10.1016/j.isci.2024.110058)  
Authors – [Ansari Aadil Shahzad](#), A Bamigbade, K Gandhi, JD Barbosa, A Sleptchenko, HN Apostoleris & S Sgouridis
2. *Quantitative assessment of the HVAC system of zero-energy houses in the Solar Decathlon Middle East 2021* (ScienceDirect – Energy Reports) (10.1016/j.egy.2023.05.042)  
Authors – OA Qureshi, E Trepici, [Ansari Aadil Shahzad](#), P Manandhar & E Rodriguez
3. *Thermal or Photovoltaic Rear Sides? A Parametric Comparison between PV Thermal and Bifacial Technology* (Elsevier-Energy Conversion and Management) (10.1016/j.enconman.2023.117134)  
Authors – OA Qureshi, [Ansari Aadil Shahzad](#), AAB Baloch, E Rodriguez, JD Barbosa, V Alberts & S Sgouridis

## CONFERENCE PUBLICATIONS

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1. *Tilt correction to maximize energy yield from bifacial PV modules* (IOP Conf. Ser.: Earth Environ. Sci., 2022)  
Authors: JD Barbosa, [Ansari Aadil Shahzad](#), P Manandhar, OA Qureshi, E Rodriguez, V Alberts & S Sgouridis
2. *Assessment of PV Performance-Enhancing Technologies in Desert Climate Conditions of Dubai* (IEEE, 2023)  
Authors: U Haider; OA Qureshi; [Ansari Aadil Shahzad](#); AAB Baloch; E Rodriguez

## BOOK CHAPTERS

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1. *Critical Feature Selection and Machine Learning-based Models for Monofacial and Bifacial Photovoltaics*. In: (Smart Grid and Internet of Things. SGIoT 2021. Social Informatics and Telecommunications Engineering, vol 447. Springer,2022)  
Authors: [Ansari Aadil Shahzad](#), P Manandhar, OA Qureshi, AAB Baloch, E Rodriguez, V Alberts & S Sgouridis

## REFERENCES

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1. Dr. Sgouris Sgouridis (Director – Research Programs – DEWA R&D Centre, UAE)  
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