104768-MEC-19CDEO-E-2017
Senior Technical Office Engineer

Holds a B. Sc. in Mechanical Power Engineering and has over 4 years experience working in renewable energy field.

PERSONAL DATA

Nationality	:	Egyptian
Birth Date	:	01/10/1994
Gender	:	Male
Marital Status	:	Single
Residence	:	Sharkia

EDUCATION

: B. Sc. in Mechanical Power Engineering, Zagazig University, 2017
: Master's Degree in Renewable Energy, Zagazig University (from 2018 till now)

LANGUAGES

Arabic	:	Native Language
English	:	Good

COMPUTER SKILLS

: Windows, MS Office (Word, Excel, Power Point), Internet
: MEP: AutoCAD, HAP, Duct sizing, Pipe Sizing, Elite fire and VRF selection software
: Building Energy Efficiency: IES-VE and eQuest
: Energy planning: PLEXOS and LEAP
: System design and simulation: WindPRO, WAsP, PVsyst, PVSOL and SAM
: System integration: HomerPRO and Developing MATLAB models
: Energy efficiency: esankey, 3E Plus and energyplus
: Financial analysis: RETScreen and Excel
: Data visualization and analysis: OriginLAB and MATLAB
: Photoshop

TRAINING COURSES AND CERTIFICATIONS

: Energy markets of today, Online course by TU delft on EDX website.
: Energy systems integration: A trend or a revolution? - Online course by KU Leuven on EDX website.
: Modelling smart grids, Online course by TU delft on EDX website.

: Incorporating renewable energy in electricity grids, Online course by Imperial College London on EDX.
: Comparison between short term planning and long-term planning software for power systems, Seminar by Egyptian Electric Utility and Consumer Protection Regulatory Agency.
: Engineering Consultants Group (ECG) (from Jun. till Oct. 2016):
- Contributed in UTW round 8 as a Trainee Engineer.
- Design of firefighting, plumbing, HVAC and medical gas systems.

: Hydraulic System Egypt (Jan. 2016): Work with maintenance team, who provides services to most of 10th of Ramadan factories.
: Arab Steel Fabrication (Sep./Oct. 2015): as a Trainee Engineer, I learned about steel fabrication process, operation management and maintenance processes.
: Shoubra El-Kheima Power Plant (from Jul. till Sep. 2015): as a Trainee Engineer, I learned about steam power plant operation and control.
: Arab Contractors (from Jul. till Oct. 2014): Acquired experience about heavy equipment maintenance.

CHRONOLOGICAL EXPERIENCE RECORD

Dates : From May 2021 till now
Employer : HETO Heliopolis Engineering and Trading (HITACHI official distributer in Egypt)
Job title : Senior Technical Office Engineer
Job Description :
- Prepare estimates of accurate cost of materials, equipment, utilities, and labor for construction projects.
- Handle cost engineering functions involving budget preparation, cost control, forecasting, and cost reporting.
- Support site engineers on mechanical technical issues in order to ensure solving problems effectively and maintain project progress.
- Prepare the subcontractors' and client's invoices based on the progress report sent by the site engineer.
- Performing design review for awarded project and confirm all related calculations like load, static pressure drop, hydraulic, pipe sizing, duct sizing calculation.

Dates : From Jan. 2021 till May 2021
Job title : Senior Renewable Energy Expert (Freelance)
Job Description :
- Conducting renewable energy resource assessment in western desert, Egypt.
- Designing of Wind and solar energy system with potential optimization.
- Design of Off-Grid renewable energy systems for desalination and irrigation.
- Preparing BoQs and tender documents for renewable energy projects.

Dates : From Sep. 2019 till Oct. 2020
Employer : Hulla & Co. Human Dynamics KG, Cairo
Project : EU supported Project
Job title : Renewable Energy Consultant

Job Description :

- Worked as Expert in renewable energy systems analysis.
- Conducting wind and Solar energy resource assessment in Egypt.
- Designing wind farms using WindPRO and SAM software.
- Designing Solar PV farms using PVsyst and SAM software.
- Designing CSP (Tower and Parabolic) farms using SAM software.
- Perform economical analysis for each site using RETScreen software.

Dates : From May 2018 till Sep. 2019
Employer : HETO Heliopolis Engineering and Trading
Job title : Technical Office Engineer
Job Description :

- Study Project bill of quantities, Design drawings, schedules & specifications.
- Prepare and review shop as built coordination & composite drawings.
- Review sub-contractor's shop drawings to ensure compliance specifications and contract agreements.
- Prepare RFI'S and coordinate between mechanical works and other trades.
- Prepare material submittal and Quantity survey.
- Prepare and follow up variation Orders and purchasing orders.
- Preparing and reviews invoices.
- Site progress tracking and participate in solving any unexpected technical difficulties.
- Prepare as-built drawings at the end of the project.

Dates : From Dec. 2017 till now
Employer : Zagazig University
Job title : University Research Assistant
Job Description :

- As a Teaching Assistant at mechanical power engineering, my duties are mainly conduct research and helping professors in teaching courses.
- Working on the short-term operational planning for the Egyptian power system as a part of master's thesis.
- Developing some literature studies regarding conventional plants dispatch characteristics.

Dates : From Nov. 2016 till now
Job title : Energy Engineer (Freelance)
Job Description :

- Techno-economical Feasibility study on re-powering of Zafarana wind farm.
- Techno-economical study of 20MW PV farm in Mongolia.
- Technical study of 80MW wind farm in Dongola, Sudan.
- Techno-economical study of PV-RO desalination system in western desert of Egypt.
- Technical analysis of a hybrid renewable energy system connected to the grid using Homer PRO.
- Techno-economical feasibility study for energy efficiency potentials in ethylene plant.
- Feasibility study of energy saving potentials for Faculty of Engineering Zagazig University.

Projects:

- Short term analysis for the optimal generation mix considering long term analysis for the Egyptian grid - Zagazig University (Jan. 2020 - Mar. 2021):
  - Updating the Egyptian master plan of renewable energy for further use in the short-term analysis.
  - Simulate the Egyptian electrical grid on PLEXOS software.
  - Impact of the renewable penetration from 2020 to 2040 is investigated.
  - Analysis of the grid constraints such as; transmission network is considered.
  - Based on this study, generation asset management plan is developed.
- Feasibility study of green hydrogen projects in Egypt - Zagazig University (Sep. 2019 - Jun. 2020):
  - Design of Renewable plants to supply green hydrogen production.
  - Design and optimize the green hydrogen plant to get a maximum amount of hydrogen considering producing smoothed profile renewable energy.
- Design and optimization of hybrid renewable energy system - Zagazig University (Sep. 2018 - Jun. 2019):
  - Site assessment for wind and solar resources considering several criteria such as: combined capacity factor, correlation between wind and solar generation profiles.
  - Design an algorithm to find the Loss of Power Supply Probability and LCOE and Excess energy.
  - Using Artificial Neural Network to find the optimized configuration of the hybrid plant.
- Feasibility study of Repowering Zafarana Wind farm - Zagazig University (Jan. 2018 - Sep. 2018):
  - Assessing the performance of existing Zafarana wind farm.
  - Performing a technical analysis based on Zafarana site considering replacing old turbines with new one having higher hub height and larger rotor diameter.
  - Conducting economic analysis based on technical results of replacing existing old turbines.

Skills:

- Good data analysis skills, gained though working with large data sets in wind, PV and CSP energies.
- Experienced at economical tools for calculating projects feasibility.
- Developing financial models for RE and Energy efficiency projects.
- Energy related topics such as Renewable energy for desalination, and energy planning.
- Very good understanding of renewable energy market development and energy market reform in Egypt.
- Experienced in Green Hydrogen feasibilities.
- Insight into the Egyptian energy sector, energy strategy of Egypt and the government policy of the sector, legal and regulatory framework of the energy sector in Egypt.
- Experienced at risk assessment and security of supply for the energy sector.

Published Papers:

- Ragab, R., Al Sawy, T., Hamdi, M., El Salmawy H. A., 2021, “Optimized Hybrid Renewable Energy System for a Baseload Plant”, Applied Energy Symposium: MIT A+B (Paper ID APEN-MIT-2021-147), Cambridge, USA, August 11-13, 2021.
- Hamdi, M., Ragab, R., El Salmawy, H. A., 2021, “Design Optimization of a Utility Scale Grid-Connected Solar PV System for Least Cost of Electricity”. 2nd International Conference of Engineering sciences and Applications (ICESA): Paper No. ICESA2021-MEC-206, Cairo, Egypt, October 22-23, 2021 (Best Paper Award).