**Canada (HIEM Energy LLP)**

**Planning new Energy Management Firm (Burnaby,), June 2023 – Present.**

* - Business Coaching and stablishing a new electrical engineering and energy management business firm: The website, business model, business plan, structure etc.

**Canada, Burnaby, Lex. Engineering LTD (Canada) 2023 Sr. Electrical Specialist** –Projects based

Engineering consultancy, power systems design, equipment specifications, technical support for the projects:

* - Pumped Storage Project 220-880MW, Alberta, Canada
* - Voltage & Current Harmonics Measurement and Analysis, Metro Vancouver, compliance with Standard IEEE519
* - Neptune Terminals Potash Project electrical network upgrade, North Vancouver
* - Capilano University, electrical network upgrade

**Germany, and Remote from Canada, FICHTNER Engineering & Consulting GmbH & Co. KG.** 2022 – 2023

FICHTNER Engineering & Consulting GmbH & Co. KG. (Germany, Remote from Canada) March 2022 –March 2023

- Sr. Project Manager Freelance (Energy Specialist) Mar 2022 – March 2023, Greater Vancouver, BC, Canada

Electric grid code development, protection and control concepts & philosophy for a new mega city

- Project Manager (Energy Studies) Sep 2022 - Dec 2022 , Stuttgart, Baden-Württemberg, Germany

Electrical system projects & studies (network modelling, analysis, stability studies on HVAC, HVDC, FACTs, BESS, Renewable energy), projects management. Worked in the design and development of NEOM project (Saudi Arabia), hybrid (ac and dc network). Key work orders with NEOM.

* - Electrical studies on transmission networks using PSSE and DigSilent
* - Development of Grid Code for generation, transmission and distribution
* - Network Protection concept and philosophy development
* - Fault level analysis for integrated HVDC and AC transmission network, using PSCAD
* - Fault level analysis for integrated BESS and AC transmission network, using PSCAD
* - Technical & commercial proposals for new global engineering bids
* - Feasibility studies development and review

**Canada, Independent Consultant, Freelancer**  2019 – 2022

Sudanese Electricity Transmission Company (SETCO), Sudan/ Key Studies.

* - Sudan-Egypt Interconnection Project, SETCO
* - STATCOM Specification Guidelines, SETCO.
* - Scope for Transmission Operation and Planning Studies, SETCO
* - Scope for Feasibility study for Expansion and Interconnection “Techno Economic Analysis, SETCO.

**Qatar National Research Fund (QNRF).** Contribution as a peer reviewer, 2020. Reviewing the aligned students’ engineering research proposals, on long-term part-time annual assignment collaboration since the year 2012.

**Amazon-** Canada Fulfillment Service, Delta BC Facility and Safety Committee - 2021 – March 2022

**Canada Varsity Tutors LLC (USA),** Northstar Educational Technologies LLC (Canada)**.** 2021 – 2022. Independent Contractor Agreement (Tutor), Online Tutor for electrical engineering students and graduates, to accelerating academic achievement for students.

**Waira Engineering Group (online Canada),** Chief Technology Officer (CTO), 2020 – 2021. Managing business development activities, coaching, bid proposals preparation and submission, financial invoicing, budgeting on the technology, IT, renewables (solar, wind, batteries, invertors).

**Saudi Arabia: Gulf Cooperation Council Interconnection Authority Control Center,** 2014 – 2019

Managed the operation planning, outages and annual maintenance plan of 400 kV GCC transmission Interconnector assets and HVDC (Frequency Control and the Dynamic Reserve Power Sharing functions), to provide quality services within available resources. Deliver technical expertise for conducting and evaluating 2-year systematic transmission operational studies. Key Projects (KSA):

* Dynamic Reactive Power Compensation in EWA (Bahrain) Network
* Iraq-Kuwait Interconnector Project
* Digitalization of Energy Sector (Artificial Intelligence, Big Data, Blockchain), GCCIA-ONS, GO-15 Joint Study
* Transmission Operation Consultancy Services (GCCIA and MS) -2018/19.
* Feasibility Study of the GCCIA Interconnector Expansion 2016/17.
* GCCIA and MS Transmission Operation Consultancy Services for 2015-2017. Team Leader
* Frequency Control Project for 50/60 Hz HVDC between KSA and GCC Member States. Project Leader (witnessed the RTDS FAT).
* Transmission System Protection Study and Settings.
* Wide Area Monitoring (WAMs) PMUs Operation and Upgrade.
* Transmission Key Performance Indicators (KPIs) maintenance. Department KPI Champion (2014-2016)
* Business Continuity Plan and Quality Management System Projects.
* Contributed to team efforts by accomplishing operational planning of the GCCIA, 400 kV network and the back-to back 50/60 Hz HVDC converters, generation scheduling, and units’ commitment in collaboration with the Operational Planning departments and Control Centres of the GCC Member States.
* Led the team to deploy the Frequency Control Project for 50/60 Hz HVDC between KSA and GCC Member States.
* Study manager for GCCIA and MS Transmission Operation Consultancy Services 2016/17.
* Manager for Quality Management System (ISO 9001:2015) Development and Implementation.
* Completed the feasibility study for the transmission network expansion and solar plant scenarios

**Qatar – Qatar General Electricity & Water Cooperation** - Kahramaa, 2003– 2014

Planning of the transmission network expansion, generation integration, and the new connections demand to domestic, commercial and industrial customers. Independently performed transmission systems engineering work and ensured that studies, plans and demand forecast meet quality objectives.

**Key Projects & Contributions:**

* 5-years transmission functional network development plans and studies
* 5-years transmission demand forecast
* Connection of Ras Girtas Power Company Ltd-RGPC IWPP Plant (2700 MW, 63 MIGD).
* Connection of Mesaieed Power Company Ltd- MPCL & RAF-B2, IPP, IWPP Plants
* Generation Forecast advisory group and stakeholders with Corporate Planning & Business Development Dept.
* Utilities Interface Agreements Committee for Kahramaa, Ras Laffan Industrial city, QP, Oil & Gas.
* Performance Measurement Analysis and Benchmarking Study.
* Team Leader & Quality Management Representative. ISO 9001:2008, QMS.
* Asset Management Strategy & Implementation Group Member.
* Initiated in 2005, the concept of 400 kV network in Qatar Transmission System that enhanced the steady state and dynamic Operation.
* Introduced in 2012 a concept to connect solar panels and battery storage, in one substation.
* Led a team that Implemented and certified the Planning Dept. in ISO QMS (ISO 9001).

**UAE – Al-Ain Distribution Company** -AADC, UAE 2000–2003

Strategic Planning and System Studies. Managed the system short, medium and long term Master Plan including load forecast for different sectors, power network expansion, planning criteria, network modelling, system studies, MVAr compensation scheme. Planned the distribution network expansion, to meet the projected 5-years demand.

* 5-years distribution master plan
* Transmission substations planning with the Transmission Company
* Distribution substations planning and reinforcement,
* Network Model development & Load Despatch Center Project
* Factory Acceptance Testing (FAT)

**Key Accomplishments:**

* Completed the distribution master plan for the future development and reinforcing the distribution network.
* Proposed criteria of new transmission substations to meet future transmission & distribution demands.
* Developed part of the transmission and distribution network models.
* Implemented and certified the Asset Management Dept. in the Quality Management System (ISO 9001)

**UK, UAE – Mott Macdonal Consulting (MML Group** - 1993–2000.

Responsible for the projects specification and design review at the Power Generation Division (1993-1996, UK) and Managed site supervision of the substation projects at the Power Systems Division (1996-2000, UAE).

**Key Projects & Contributions:**

* Al Ain Power System Master Plan Study, UAE.
* Ruwais/Zakher/Rameh 220/33 kV and W16 132/11 kV substations, UAE.
* Mirfa Power/Desalination Plant, 220kV GIS Extension/Al Mirfa/Al Ain 33kV Power Distribution Networks, UAE.
* Shoaiba, Phase 2 - Power and Desalination Plant, KSA.
* Faisalabad & Kotri Combined Cycle Power Plants, Pakistan.
* Khartoum North Power Station-Phases II& III, 60 MW Extension, Sudan.
* Thames Barrier Control Systems Refurbishment, London.
* Banjarmacine Transmission Line Study Supervisory Control and Data Acquisition, Indonesia.