

Abubakar Sani Hassan, PhD, BEng, MIET, SMIEEE

Principal Electrical Project Engineer | Energy & Government Data Analytics Specialist

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Professional Summary

I am an Electrical Engineer and Government Analytics Specialist with over 12 years of experience advancing energy regulation, infrastructure development, and data-driven policy reforms. My background includes a proven record of leading large-scale gas and power projects, optimizing distributed energy systems, and designing analytics tools that enhance regulatory efficiency and transparency. I am also proficient at translating complex data into actionable insights for government and industry decision-makers. A published researcher with international collaborations, including Cardiff University and Lawrence Berkeley National Laboratory. Recognized as an IEEE Senior Member for professional maturity and noteworthy contributions to the global energy community.

Key Skills

- Government and Regulatory Analytics.
 - Energy Systems Optimization.
 - Policy Development and Implementation.
 - Project and Stakeholder Management.
 - Data Analysis & Visualization (Excel, Pivot Table, Power Pivot, Power Query, Power BI, Python in Excel).
 - Power Systems Modelling & Simulation (NEPLAN, ETAP, MATLAB, GAMS, AIMMS).
 - Public Sector Reform & Infrastructure Regulation.
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Professional Experience

Principal / Senior Electrical Engineer at the Nigerian Midstream and Downstream Petroleum Regulatory Authority (NMDPRA), Nigeria: *Jan 2022 – Present.*

- Spearheaded development of national regulations and technical guidelines for Nigeria's midstream and downstream petroleum operations.
- Oversaw review and approval of multi-billion-dollar projects, including NLNG Train 7 (+7 MTPA LNG capacity, 1.1 BSCFD feed gas).
- Streamlined regulatory project management, enhancing transparency, efficiency, and compliance with international safety standards.

Electrical Engineer at the Department of Petroleum Resources (DPR), Nigeria: *Sep 2018 – Dec 2021.*

- Designed and deployed a Power BI payment tracking dashboard monitoring **>\$3M annually**, improving compliance and reporting.

- Automated multi-disciplinary engineering review metrics, enabling approval of projects delivering **>300 MMSCFD of gas utilization**.
- Optimized DPR headquarters construction BOQ, saving **\$55M** while ensuring technical and regulatory compliance.
- Led technical assessments for the Marginal Field Bid Round, generating **millions in signature bonuses** for government revenue.

Head, Planning and Network Expansion Unit at the Jos Electricity Distribution Plc: *May 2018 – Sep 2018*.

- Automated asset mapping and AMI meter data integration in Power BI, reducing settlement computations from **2 days to 1 hour**.
- Directed network expansion projects aligned with load forecasting studies, ensuring efficient capital investment.
- Enforced regulatory and safety compliance, achieving positive reviews from the Nigerian Electricity Regulatory Commission (NERC).

Assistant Manager, Network Assets at the Jos Electricity Distribution Plc: *Oct 2016 – Apr 2018*.

- Developed advanced distribution network model using real AMI data to support load-flow analysis and investment decisions.
- Designed optimal expansion plans and feasibility studies guiding **multi-million-Naira investment decisions**.
- Initiated rural electrification discussions on integrating solar PV into distribution networks.

Doctoral Research Fellow at the Institute of Energy, Cardiff University, UK: *Oct 2012 – Sep 2016*.

- Developed a decision-support tool for optimizing distributed energy resources (solar PV + storage), published in *Applied Energy* generating **300+ citations**.
- Modelled and simulated advanced distribution networks using NEPLAN, ETAP, AIMMS, GAMMS) leading to optimal pathways of reducing CO₂ emissions in National Energy Systems.
- Supervised MSc students and contributed to renewable energy research under Centre for Integrated Renewable Energy Generation (CIREG).

Research Affiliate at the Grid Integration Group of the Lawrence Berkeley National Laboratory (LBNL), USA: *Apr 2015 – Jun 2015*.

- Developed soft-linking interface between Distributed Energy Customer Adoption Model (DER-CAM) and NEPLAN to assess grid impacts of distributed energy resources.
- Co-authored peer-reviewed publication in *Elsevier's Energy* journal on DER optimization and policy implications.

Education

- **PhD, Electrical Engineering** – Cardiff University, UK (2012–2016).
- **MSc, Energy Systems Engineering** – University of Glamorgan, UK (2010–2011).

- **BEng, Electrical Engineering** – Ahmadu Bello University, Nigeria (2002–2007).
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Professional Memberships & Certifications

- Senior Member, IEEE (SMIEEE) which is only obtainable among top 10% of global members.
 - Member, Institution of Engineering and Technology (MIET).
 - Corporate Member, Nigerian Society of Engineers (MNSE).
 - Registered Engineer, Council for the Regulation of Engineering in Nigeria (COREN).
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Selected Awards and Grants

- Senior Member Grade, IEEE (2022): Recognition of professional maturity and significant contributions.
- Cardiff University PGR International Experience Fund (2015): Competitive research grant.
- Second Prize, IEEE Standards Education Committee UK&RI Contest (2013): Paper on engineering standards in power and energy systems.
- PTDF PhD and MSc Overseas Scholarships, Nigeria (2010–2016): Fully funded academic awards.