

Job Advert

Position: Balancing Energy Supply and Demand Engineer / Technologist
Programme: Programme 2
Division: Applied Energy Research, Development & Innovation
Location: Sandton
Period: Fixed Term Contract - 3 years

1. About the position

The Balancing Energy Supply and Demand Engineer \ Technologist is responsible for developing, maintaining, and applying analytical models to support long-term and short-term energy system planning. The role focuses on evaluating demand growth, generation expansion, transmission planning, and the integration of renewable energy and emerging technologies. The Engineer \ Technologist will provide data driven insights to support investment decisions, policy analysis, and system reliability under evolving energy transition scenarios.

2. Qualifications and Minimum Requirements

- Bachelor's in Electrical Engineering, Energy Engineering, Power Systems, Applied Mathematics, Economics, or a related field. A post graduate degree would be an advantage.
- 2–5 years of experience in energy, power system modelling, or energy analytics (experience level adjustable).
- Experience working with utilities, system operators, energy consultancies, or regulatory agencies is preferred.
- Experience with renewable integration, storage modelling, hydrogen, or EV impacts
- Knowledge of national or regional energy planning frameworks
- Professional Registration (optional).

3. Technical and Skills Required

- Experience with databases and data processing.
- Understanding of power systems, electricity markets, and energy economics.
- Familiarity with GIS tools is an advantage.

4. Key Competencies Required

- Strong analytical and problem-solving skills.
- Ability to communicate complex technical results clearly.
- Scenario-based and systems-thinking mindset.
- Attention to detail and documentation.
- Ability to work independently and in multidisciplinary teams.

5. Summary of Key Responsibilities and Job Scope

5.1 Energy System Planning

- Develop and maintain long-term energy system planning models (generation, transmission, and demand).
- Conduct load forecasting and scenario analysis to assess future energy needs.
- Evaluate capacity expansion, resource adequacy, and system reliability under multiple scenarios.
- Support Energy Planning and least-cost planning studies.

5.2 Energy Modelling & Analytics

- Build, calibrate, and validate energy models using tools.
- Analyse impacts of renewable energy integration, storage, electric vehicles, and demand-side management.
- Perform production cost modelling, dispatch simulations, and sensitivity analyses.
- Translate complex model outputs into actionable insights for technical and non-technical stakeholders.

5.3 Renewable Energy & Energy Transition

- Assess technical and economic feasibility of renewable energy projects and hybrid systems.
- Model variability, intermittency, and flexibility requirements of renewable generation.
- Analyse pathways for decarbonization, net-zero targets, and emissions reduction strategies.

5.4 Policy, Regulation & Stakeholder Support

- Support policy analysis by quantifying impacts of energy regulations, market designs, and incentives.
- Provide analytical inputs for regulatory filings, planning reports, and investment proposals.
- Collaborate with planners, economists, policymakers, and grid operators.

5.5 Data Management & Quality Assurance

- Manage large datasets related to demand, generation, fuel prices, and network constraints.
- Ensure data integrity, transparency, and reproducibility of models and analyses.
- Document assumptions, methodologies, and model limitations.

6. Additional Information

It is our intention to increase the level of Indian, Coloured, White and people living with disabilities male, female and/others of representativity at all levels throughout the organisation. Therefore, preference will be given to competent group of candidates named above.

The Balancing Energy Supply and Demand Engineer / Technologist will be based at the SANEDI office in Sandton, Johannesburg.

Please email a detailed CV to: besdengineer@sanedi.org.za

The closing date for this position is: **26 February 2026**

Should you not hear from SANEDI within 30 days after closing of this advert, please consider your application unsuccessful.