Manager Power Systems and Market Modelling

OUR CULTURE

The **Department for Energy and Mining (DEM)** is committed to being the Most Transformative Energy and Mining Government Department in the World. To achieve this, we have developed four key enablers to high performing behaviour. These enablers underpin everything we do.

- Our culture is diverse, professional, accountable, respectful and committed to safety. We work collaboratively so we all succeed.
- We are committed to demonstrating personal and professional leadership and value being recognised as leaders in our field.
- We deliver the best outcomes for South Australians.
- We listen and engage meaningfully so that our decisions and actions build a successful and sustainable future for all South Australians

We are a White Ribbon Accredited workplace that promotes gender equality and a zero tolerance of violence in the workplace.

DEPARTMENT CONTEXT

DEM leads the global transformation economy, overseeing the responsible mining and production of the minerals, metals and fuels of the future, to safely and sustainably generate the energy and low carbon products of the future.
Our low-cost power, leading regulation system and culture of innovation is leading to the decarbonisation of industry, new modern manufacturing opportunities, increased employment and greater prosperity and security for the people of South Australia.

We particularly acknowledge the essential role that traditional Aboriginal people play in the energy and mining sector as land managers, heritage custodians, business owners and community leaders.

The Policy and Programs Division lead strategic policy, program and project development to support South Australia's energy and resource sectors and consumer energy wellbeing. It identifies opportunities and barriers to investment and development, informed by data, analysis and stakeholder engagement and devises policies and programs that encourage innovation, investment, long-term sector resilience, and deliver responsible outcomes.

Provides data-driven analysis and insights to support strategic decision-making. Leads energy forecasting and planning, and develops economic frameworks, modelling and analysis to inform policy, programs and infrastructure planning. The unit delivers advice on market trends, economic conditions and the impacts of government initiatives, ensuring decisions are grounded in robust evidence.

ROLE TITLE	**Manager Power Systems and Market Modelling**		
CLASSIFICATION	**PO5**	**POSITION NUMBER**	**P55995**
DIVISION	**Policy and Programs**		
BRANCH	**Analytics and Planning**		
DESIGNATED POSITION[1]	**No**		

ROLE PURPOSE

The Manager **Power Systems and** Market Modelling is responsible for leading and directing the strategic planning and delivery of critical and complex power system analysis, energy market modelling and forecasting programs, projects and services that inform the development of South Australia's least-cost energy system. The role leads a multidisciplinary team that develops and applies best-practice power system and market models, integrates technical and economic analysis, and provides authoritative advice on power system security, network and generation development, energy balances, market outcomes, emerging risks and demand growth. The position engages with industry, regulatory bodies, governments and consultants to support an affordable, reliable, secure and low-emissions energy system for South Australia.

REPORTING / WORKING RELATIONSHIP

- Reports to: Director, Analytics and Planning
- Direct reports: Approximately 3 FTE
- Works with: Strategic Policy and Delivery Division, Regulation and Compliance Division, and energy market stakeholders.

KEY OUTCOMES

- Lead and direct the strategic planning and delivery of critical and complex power system analysis, energy market modelling and forecasting programs, projects and services that influence the development of South Australia's least-cost energy system.
- Lead and manage a multidisciplinary team of power system engineers, energy market modellers and data analysts, including setting priorities, building capability and ensuring the delivery of high-quality analysis and specialist advice.
- Lead and oversee power system planning studies, research and best-practice network analysis to identify emerging limitations and future requirements for system security, including system strength, inertia, frequency control and the secure integration of renewable generation, storage and distributed energy resources.
- Lead and oversee the development, production and maintenance of best-practice energy market models, benchmarks, forecasts, cost models and energy balances to inform policy, planning and investment decisions.

- Integrate power system and market modelling to assess the technical, economic and locational impacts of prospective generation, storage, network development and demand growth, and identify no-regrets actions that support reliability, security and efficient market outcomes.
- Lead operational forecasting and provide expert advice on emerging market and power system conditions, critical situational awareness and risk.
- Oversee the management of energy-related data, model inputs, assumptions and outputs from state and national sources, and ensure appropriate model governance, documentation, quality assurance and benchmarking.
- Provide authoritative advice and recommendations by interpreting complex model outputs, diagnosing underlying issues, identifying emerging risks and developing innovative solutions to highly complex power system, energy market and policy matters.
- Initiate, promote and manage engagement and consultation with industry organisations, market bodies, network service providers, regulatory agencies, governments and consultants to influence a coherent approach to energy system planning, forecasting and development.
- Lead the continuous improvement of power system and market modelling capabilities by adopting contemporary tools and methods, adapting precedents, monitoring outcomes and identifying opportunities for innovation and efficiency.
- Represent DEM and the State on national and international committees, forums and conferences, including showcasing South Australia's approach to delivering an affordable, reliable, secure and low-emissions energy system.

SELECTION CRITERIA

- Extensive experience leading the strategic planning and delivery of complex power system analysis, energy market modelling, forecasting, research or related programs and services, including critically examining sensitive information and formulating innovative solutions.
- Extensive experience strategically leading multidisciplinary teams in the planning and delivery of major program objectives, including providing expert specialist advice to, developing and managing the performance of professional staff.
- Demonstrated expertise across power system operation and energy market modelling, with extensive discipline knowledge in at least one of these areas and a strong understanding of the other.
- Extensive knowledge of electricity transmission systems, network constraints and power system security, together with contemporary energy market economics, modelling and forecasting principles, practices and tools.
- Demonstrated experience using, developing or overseeing relevant analytical applications, such as PSS®E, PSCAD, energy market simulation platforms, forecasting tools and large energy datasets.

- Significant capacity to interpret highly complex technical and economic analysis and translate model outputs into clear, evidence-based policy, planning and investment advice to government.
- Comprehensive understanding of government policy directions and legislative processes, and of the commercial, regulatory and legal issues affecting contemporary energy markets and large-scale infrastructure development.
- Significant capacity to provide professional leadership, guidance and representation on behalf of an organisation and the State, with recognised contribution at a national and/or international level.
- Highly developed communication, negotiation and interpersonal skills, including demonstrated ability to establish collaborative networks across industry and government and resolve conflict constructively.
- Proven ability to work under broad policy direction with a high degree of professional independence, determine professional standards, objectives and priorities, and achieve critical objectives within the agency's corporate goals.

ESSENTIAL QUALIFICATIONS

- Master's degree or PhD in Electrical Engineering, Power Systems Engineering, Economics, Statistics, Mathematics or a related discipline, with extensive recognised expertise relevant to power systems and/or energy market modelling.
- Accreditation as a Chartered Professional Engineer (CPEng) or Registered Professional Engineer (RPEng) is highly desirable where relevant to the incumbent's discipline.

SPECIFIC REQUIREMENTS

- DEM encourages flexible working arrangements such as working from home, part time work, job share, compressed weeks and purchased leave. Arrangements are negotiated with the appropriate manager.
- The incumbent will embrace diversity in all its forms and demonstrate inclusive behaviours in the workplace.
- The incumbent will be required to maintain a safe working environment by adopting appropriate hazard management practices consistent with the role.
- The incumbent is expected to uphold the ethical behaviour and professional integrity standards as contained in the Public Sector Act 2009, as well as comply with any other relevant legislated requirements.
- Out of hours work may be required.
- Intra and Inter-State travel may be required.
- Driver's licence required.
- Appointment to this role may be subject to a satisfactory screening check.