# Position Details

## Research Scientist/Engineer- CSOF7

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| The following information is for applicants | |
| Advertised Job Title | Principal Electrical Power Systems Researcher |
| Job Reference | 92126 |
| Tenure | Indefinite, full time (part time may be considered) |
| Salary Range | AU$146k - AU$162k per annum (pro-rata for part-time)  plus up to 15.4% superannuation |
| Location(s) | Newcastle, NSW preferred. Melbourne, Brisbane, Perth or other sites with an Energy team presence may be considered. |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | All Candidates (visa sponsorship may be provided to the successful candidate if required) |
| Position reports to the | Team Leader, Power Systems and Controls |
| Client Focus – Internal | 40% |
| Client Focus – External | 60% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Thomas Brinsmead via email at Thomas.Brinsmead@csiro.au or phone +61 2 4960 6143 |
| How to apply | Apply online at <https://jobs.csiro.au/>  Internal applicants please apply via **Jobs Central**  If you experience difficulties when applying, please email [careers.online@csiro.au](mailto:careers.online@csiro.au) or call 1300 984 220. |

**Acknowledgement of Country**

CSIRO acknowledges the Traditional Owners of the land, sea and waters, of the areas that we live and work on across Australia. We acknowledge their continuing connection to their culture and pay our respects to their Elders past and present. View our [vision towards reconciliation](https://www.csiro.au/en/about/Indigenous-engagement/Reconciliation-Action-Plan).

### Role Overview

The role of Research Scientist/Engineer staff is to conduct innovative research leading to scientific achievements that are aligned with CSIRO’s strategies. You will be required to lead applied research activities in electrical power systems and energy network modelling and control, working with a range of partners to take the latest optimisation, simulation and analytical techniques to impact the growth of Australia’s electricity system. You will have the opportunity to build and maintain international networks of research collaborators and deployment partners, play a lead role in securing project funds, and pursue new ideas and approaches that create new concepts.

### Duties and Key Result Areas

* Initiate and lead collaboration with diverse industrial and research partners, including network service providers, universities, energy market operators, regulators and technology providers.
* Develop and implement a program of research to tackle the open challenges in the area of large-scale power systems.  
  A focus of these positions will be the multi-year program [Global Power Systems Transformation](https://www.csiro.au/en/research/technology-space/energy/g-pst-research-roadmap). The successful candidate will be heavily engaged in delivering this work.
* Develop intellectual property in the field of power systems engineering.
* Lead and mentor junior research staff.
* Combine the delivery of pragmatic solutions needed by industry project work with the extraction of valuable scientific contributions that advance our research strategy.
* Expose our research and its outcomes to clients and the scientific community through oral presentations, webinars and written technical reports and scientific papers.
* Advise policy makers and inform and share knowledge with non-scientific audiences.
* Work collaboratively as part of a multi-disciplinary, often regionally dispersed research team, and business unit to carry out tasks in support of CSIRO’s scientific objectives.
* Adhere to the spirit and practice of CSIRO’s Code of Conduct, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals.
* Other duties as directed.

*CSIRO requires National Police Checks to be provided by preferred applicants for all new positions. Where matters are disclosed in a National Police Check, only those that are relevant to the position and the ability of the applicant to perform the role will be taken into account.*

## **Selection Criteria**

#### Essential

*Under CSIRO policy only those who meet all essential criteria can be appointed.*

1. Bachelor’s degree and PhD or equivalent relevant work experience in Engineering, Mathematics or related fields, with a focus on power systems engineering.
2. Experience in running or managing electrical generation/distribution/transmission simulation studies, including leading successful collaborations and/or creating simulation data sets from first principles.
3. A strong record of science innovation as evident through quality publications, IP generation, or commercialisation.

## **Desirable**

1. History of developing and leading successful research proposals, including collaborations across industry/academia.
2. Successful delivery of projects, working with multidisciplinary teams, and mentoring junior engineers or research staff.
3. Experience in running or managing electrical generation/distribution/transmission simulation studies, including creating simulation data sets from first principles.
4. Multi-year experience with industry exposure in one or more of the following fields
   1. Power System planning (transmission or distribution), including both network and non-network solutions, ideally across scenario development, decision-making methodologies, techno-economic assessment, and technical assessments on system reliability (resource adequacy and capability) and security (frequency and voltage managements, inertia and system strength).
   2. Power system operation that may include, but not limited to, small-signal and transient stability analysis, black-start and restoration simulation, and studies on essential power system services.
   3. Electromechanical and/or electromagnetic transient simulation of power systems, ideally including real-time simulation (software or hardware-in-the-loop) using industry leading technologies such as Opal-RT and RTDS RSCAD.
   4. Design of electronic power converters, including considerations of possible interactions among multiple power inverters and between power inverters and more traditional (synchronous) power generators and loads, potentially with high penetration of distributed energy resources.
5. Experience in any of the following: OpenDSS, algorithms for solving systems of differential algebraic equations, and power system planning in collaboration with a system operator.
6. Experience with software or data quality control processes: version control, issue tracking, continuous integration, documentation deployment.
7. Experience in automating studies in PowerFactory and/or PSCAD through APIs from languages such as Python
8. Solid coding experience in at least one of the following, or similar, languages: Python, C++, Julia

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## **Required Competencies**

* **Teamwork and Collaboration:** Creates and fosters an environment in which there is a high level of cooperation within and between teams. Facilitates positive team relationships to build interactions across Business Units and the organisation.
* **Influence and Communication:** Identifies critical stakeholders and influences them via an influential third party, for example through an established network, to gain support for sometimes contentious proposals/ideas.
* **Resource Management/Leadership:** Provides leadership that fosters an environment that encourages new ideas and provides support for the development of emerging skills. Creates trust by displaying consistency, understanding, integrity and patience. Plans, seeks, allocates and monitors resources to achieve outcomes.
* **Judgement and Problem Solving:** Resolves major conceptual scientific, technical, commercial or management problems, which have a significant impact upon the field of research, professional function, the Business Unit or the Organisation. Situations faced have little or no precedent and require original concepts and approaches.
* **Independence:** Assesses the risk and opportunity of identified strategies, options and actions. Overcomes problems and setbacks in achieving goals. Invariably includes consideration of value-added future impact on bottom line when determining the optimal and efficient use of resources.
* **Adaptability:**Is flexible in response to external change or when faced with external constraints. Identifies and promotes the opportunities arising as a result of change.

Special Requirements

* The successful candidate will be asked to obtain and provide evidence of a National Police Clearance or equivalent. Please note that individuals with criminal records are not automatically deemed ineligible. Each application will be considered on its merits.
* If the successful candidate is not an Australian Citizen or Permanent Resident, they may be required to undergo additional security clearances, which may include medical examinations and an international standardised test of English language proficiency (i.e. IELTS test).- https://ielts.com.au/

## **About CSIRO**

We solve the greatest challenges through innovative science and technology. Visit [CSIRO Online](http://www.csiro.au/) and <https://www.csiro.au/Energy> for more information.

CSIRO is a values-based organisation.  In your application and at interview you will need to demonstrate behaviours aligned to our values of:

* People First
* Further Together
* Making it Real
* Trusted