# Position Details

## Research Scientist/Engineer- CSOF7

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| The following information is for applicants |
| Advertised Job Title | Senior Electrical Power Systems Researcher |
| Job Reference |  80601 |
| Tenure | Indefinite (Full-time) |
| Salary Range | AU$141,949 to AU$157,055 pa + up to 15.4% superannuation |
| Location(s) | Newcastle, NSW preferred, other locations considered |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | * All Candidates
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| 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 Nariman Mahdavi via email at nariman.mahdavimazdeh@csiro.au |
| 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 or call 1300 984 220. |

### Role Overview

The role of research science & engineering staff in CSIRO is to conduct innovative research leading to scientific achievements that are aligned with CSIRO’s strategies. You will be engaged in scientific activity ranging from fundamental research to major projects directly solving problems for our industrial partners. 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:

* Develop commercialisable intellectual property in the field of power systems engineering.
* Interact and collaborate with diverse industrial and research partners, including network service providers, universities, energy market operators, regulators and technology providers.
* Lead our power systems transient analysis and simulation research, developing our strategy to tackle the open challenges in the area, and pursuing funding opportunities to realise it.
* 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.

## **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.
* **Extensive applied research experience,** balancing research excellence with the requirements of Australia’s current and next-generation electricity generation, transmission, and distribution systems (in near real-time and longer-term timeframes).

## **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 or Mathematics, with a focus on power systems engineering.
2. Multi-year experience with industry exposure in the field of electromechanical and/or electromagnetic transient simulation of power systems, including real-time simulation (software or hardware-in-the-loop) using industry leading technologies such as Opal-RT and RTDS RSCAD.
3. Extensive experience in running electrical generation/distribution/transmission simulation studies, including creating simulation data sets from first principles.
4. Solid coding experience in at least one of the following languages: Python, FORTRAN, C++, Julia
5. A strong record of science innovation as evident through quality publications, IP generation, and commercialisation.

## **Desirable:**

1. 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.
2. Experience with software quality control processes: version control, issue tracking, continuous integration, documentation deployment.
3. Experience in automating studies in PowerFactory and/or PSCAD through APIs from languages such as Python
4. History of developing and leading successful research proposals, including collaborations across industry/academia.
5. Successful delivery of projects, working with multidisciplinary teams, and mentoring junior engineers or research staff.

Special Requirements

Appointment to this role may be subject to the following condition:

* The successful candidate will be asked to obtain and provide evidence of a National Police Check or equivalent. Please note that people with criminal records are not automatically deemed ineligible. Each application will be considered on its merits.

## **About CSIRO:**

We solve the greatest challenges through innovative science and technology. To find out more visit us [online](http://www.csiro.au/)!

Find out more about CSIRO [Energy](https://www.csiro.au/en/Research/EF)