Scientific Rigour Position Statement

Environment, Energy and Science, Department of Planning, Industry and Environment

Science is the systematic study of the natural, economic and social world used to develop and apply knowledge. It draws on evidence collected using scientific methods to study biological, chemical and physical processes, as well as social and human behaviour.

In Environment, Energy and Science (EES), **science and research** includes collecting, modelling, mapping, analysing and sharing data and information. We use a range of tools to collect data including research, experiments, monitoring, remote sensing and surveys. We use our findings to guide decisions at all levels of EES operations, from on-the-ground management through to major strategic policies. In many cases, we publish our findings in scientific journals, technical reports or on the web to make them available to the public.

Why have a position statement?

This Scientific Rigour Position Statement expresses our commitment that, across all disciplines, science and research done by or on behalf of EES will meet globally accepted standards for scientific rigour, from start to finish.

This supports EES to have robust scientific evidence to inform decisions. Implementation of the Position Statement ensures investment in scientific work is maximised, research meets standards of scientific rigour, and results are both defensible and meaningful.

What is scientific rigour?

Scientific rigour is a process of ensuring sound and defensible science. It requires:

Appropriate design

- establish a clear objective
- develop a scientifically sound and appropriate method or use approved standard methods. Include how we will evaluate the study
- use people with relevant skills and experience
- peer review the project design and evaluation approach, before implementation.

Meticulous implementation

- adhere to the adopted methods
- document variations to project design
- ensure data are reproducible, secure, discoverable and accessible.

Objective analysis and reporting of results

- ensure our results and conclusions accurately reflect the evidence
- have our findings peer-reviewed prior to applying or publishing data, results and conclusions
- evaluate our study
- publish results where appropriate.

How do we define peer review?

The Australian Code for the Responsible Conduct of Research, 2018 describes peer review as the 'impartial and independent assessment of research by others working in the same or a related field'. Peer review may be undertaken by EES staff and/or by external reviewers. The critical elements are objective assessment by a suitably qualified person who is independent of the work.

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