

National Environmental Prediction System (NEPS) Scoping Study Terms of Reference (ToRs) for the Panel of Experts

Revised 14 December 2018

Proposed under the Australia's Government's National Research Infrastructure Investment Plan, released in the 2018-19 Budget, the National Environmental Prediction System (NEPS) is conceived as a federated form of national research infrastructure, enabling integration of environmental observations with predictive modelling to produce data and information products and services to be used by decision-makers to boost our economy through improved environmental knowledge.

A scoping study will provide independent advice to the Australian Government on the National Research Infrastructure (NRI) needs for establishing and managing a NEPS. It will develop a vision for a NEPS research infrastructure priority identified in the 2016 National Research Infrastructure Roadmap, building on existing NRI environmental data capabilities, including those expanded as part of the Government response to the Roadmap.

The NEPS scoping study has two key objectives:

1. Obtain broad agreement from key stakeholders regarding the components of a national capability for a NEPS.
2. Develop a detailed establishment plan, including identification of stakeholder co-investments and actions necessary to support the development and maintenance of the capability.

Terms of Reference

Advise the Australian Government on the best outcomes for a National Environmental Prediction System (NEPS) by:

- Developing a consultation strategy;
- Carrying out the identified consultation process to define the appropriate scope and activities of a NEPS; and
- Preparing an Implementation Plan for the NEPS with recommendations on focus, funding, timing, governance and delivery.

Guidance

In performing its duties, the Scoping Study Panel of Experts will give regard to the following guidance provided by the Department of Education and Training:

- Consider and building on previous work undertaken as part of the Research Infrastructure Investment Plan.
- Map out the current environmental data streams and modelling capability, including predictive, and the roles and resources committed by the various stakeholders to develop and maintain it.
- Identification of primary and secondary users of current modelling and of a future predictive modelling capability, in both research and operations, and prioritise of stakeholders in a future model.
- Identification of the impacts and benefits of the NEPS.

- Identify a preferred model, with options for key components, for the implementation of a NEPS as an NCRIS project or way of integrating approaches across relevant activities. These models should look at both low and high cost options.
- The implementation should identify:
 - Identification of the key aspects the NEPS should focus on, initially and expand to over time, and the complexities and limitations in undertaking these now, including data sources etc.
 - A detailed implementation plan from development through to maintenance, including timeframes for the development of the capability
 - Utilisation of existing research infrastructure within the NCRIS network and institutions and beyond and how the NEPS will likely impact these, including any augmentations required within these to meet the data and technical requirements of the NEPS
 - Data interoperability challenges and approaches to address these in the short and long term
 - Interoperability with economic and social system models in the short and long term
 - Approaches to data integration and upload of data
 - Expected technical advances in sensors and the impact and leveraging of these over time
 - Proposed enhanced analytical technical infrastructure (storage, analysis and computing) and improved practices around use.
 - Opportunities to leverage or enhance institutional-level research infrastructure, e.g. hosted by a university or publicly funded research agency
 - Operational and capital funding requirements, including but not limited to, funding and staffing roles
 - The roles and responsibilities for any proposed staff
 - Agreed co-investment from stakeholders over 10 years
 - Proposed governance arrangements, including a minimum of two different models
 - Appropriate host / lead agent for the capability, and
 - Indicative access arrangements, especially opportunities to optimise free and open access to data and information products and services for those with the need and the right to use them.
 - Proposed key performance indicators for measuring the success of the NEPS through establishment and operations.