Australian Renewable Energy Mapping Infrastructure (AREMI)

AREMI – the Australian Renewable Energy Mapping Infrastructure – is a NICTA-led project providing free, open access to spatial data for the renewable energy industry. The Australian Renewable Energy Agency (ARENA) will provide up to $2.1 million in funding toward AREMI. www.nationalmap.gov.au/renewables

AREMI Benefits

AREMI makes it easier for renewable energy projects to get off the ground in Australia. We provide a 'one stop shop' for all open geospatial data relevant to the energy sector from government, industry and research. Energy project developers can freely access spatial information such as existing electricity infrastructure to assist with site identification. State and local governments can use the open data AREMI provides to assist with environmental and regulatory planning approvals, and tracking and promoting projects in their region. The AREMI platform enables financiers and investors to explore the potential success of proposed ventures. AREMI also acts as a repository for ARENA-funded mapping projects to enable their access in one consolidated location.

What is the technology?

The AREMI platform leverages the National Map initiative, a NICTA-developed capability for **data.gov.au**. The open source, three-dimensional mapping platform converts and visually displays information in a web browser without the need for external software or plugins. It facilitates access to multiple geo-spatially tagged datasets of various formats in one location. For example, it can be used to compare mapping data; electricity, geothermal and land use data from Geoscience Australia; water and climate data from the Bureau of Meteorology; solar data from other ARENA projects; and statistics from the Australia Bureau of Statistics. Users can overlay multiple data sets such as population, infrastructure, power utilities and protected habitats or even their own internal data services.

Figure 1: The Australian Renewable Energy Mapping Infrastructure

NICTA's unique approach

Relying on the strong geospatial visualisation skills at NICTA, the front-end of the software uses Cesium, an open source WebGL virtual globe and map engine, which is developed by NICTA alongside other organisations.

Status

AREMI is available at www.nationalmap.gov.au/renewables. Development will continue until July 2016 and Geoscience Australia are hosting AREMI until at least July 2019. NICTA's team of software engineers and user experience designers, in collaboration with the Clean Energy Council, have a strong consultation process with continuous user feedback to ensure the site provides relevant information – to provide feedback please contact our team (details below right).

Collaborators

NICTA has partnered with Geoscience Australia and the Clean Energy Council on the AREMI project. Geoscience Australia provides hosting for the platform, while the Clean Energy Council fulfils the role of industry liaison partner. ARENA will provide up to $2.1 million in funding towards the project. AREMI is led by the NICTA Environment Business Team, developing leading edge predictive analytics and spatial visualisation tools for improved environmental resource management.
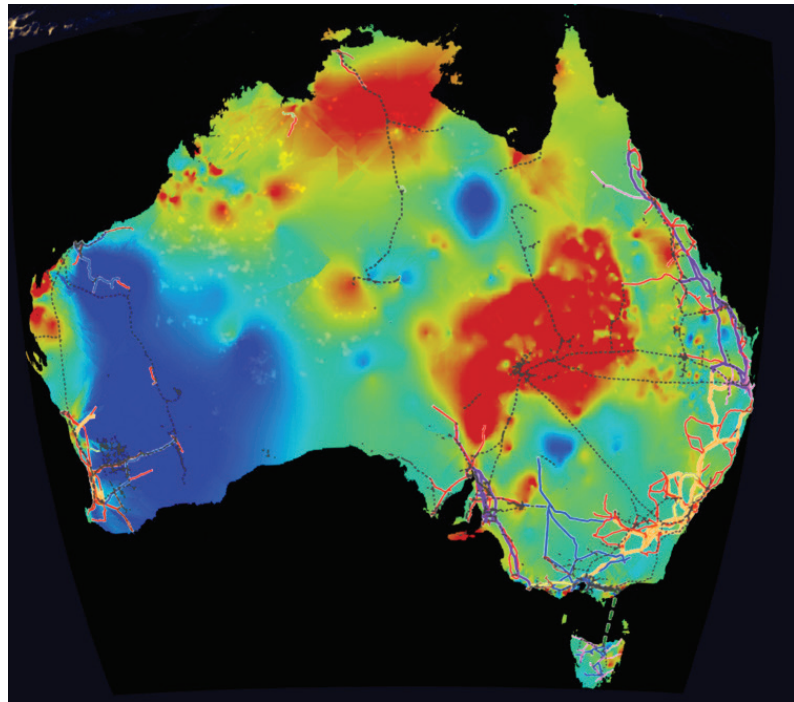
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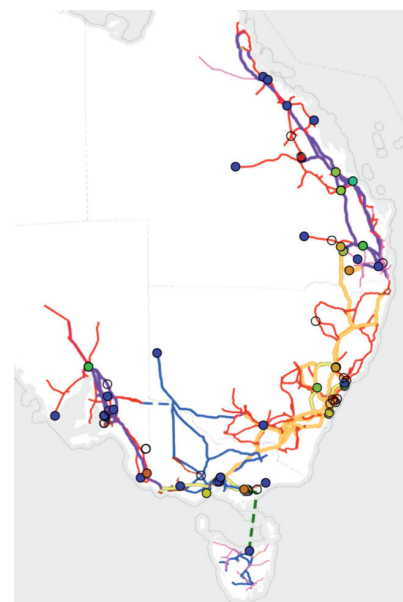

Figure 2: Electricity power stations and transmission lines visualised on AREMI

Project Coordinator
aremi@nicta.com.au

Technical Lead
Mats.Henrikson@nicta.com.au

Senior User Experience Designer
Hilary.Cinis@nicta.com.au

Research Excellence in ICT
Wealth Creation for Australia

Leading the Way

NICTA is Australia's Information and Communications Technology (ICT) Research Centre of Excellence, driving innovation through high quality research, research training, commercialisation and contract research.

NICTA has the largest concentration of ICT researchers in Australia. Our research focuses on use-inspired basic research that benefits industry, the community and the national interest.

NICTA has strong research capability in:
• Software Systems
• Mobile Systems
• Machine Learning
• Computer Vision
• Optimisation.

Our Business Teams are the market focus of our research capabilities:
• Broadband and the Digital Economy
• Infrastructure, Transport and Logistics
• Security
• Environment.

NICTA researchers work on Business Team projects supported by:
• An Engineering and Technology Development Team
• IP, Legal and other professional support.

Our work as a world-class research institute and Centre of Excellence in science and innovation brings together many of Australia's and the world's top ICT researchers. NICTA provides them with the facilities and support they require, making imagination to impact a reality.

NICTA's unique approach fosters and develops ICT research. We work closely with both industry and other research institutions to solve problems and make breakthroughs in ICT with real impact. NICTA's focus on use-inspired research means our projects have direct relevance to the challenges faced by business, government and individuals around the world. The result is breakthrough technologies that provide commercial opportunities and have a positive impact on Australia's export earnings.

Terria is a NICTA company specialising in software for web-based spatial data analytics and visualisation. Our federated spatial data exploration technology enables compelling spatial data websites such as the Australian National Map, the Australian Renewable Energy Mapping Infrastructure and the UNEPFI Global Risk Map.

Our spatial predictive analytics technology provides a range of advanced spatial detailing, summarisation and prediction techniques. We provide a web-based platform which combines our federated spatial data discovery technology with our analytics technology to provide advanced spatial data analytics for a large number of industries including environment, energy, finance, and demographics.

www.nicta.com.au

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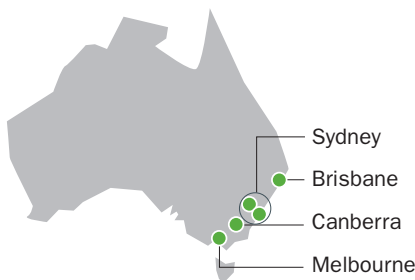
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