

NETWORK OPPORTUNITY MAPS FOR RENEWABLE ENERGY AND DEMAND MANAGEMENT

Meeting the information needs of a new era

OVERVIEW

This project is developing freely available, annually updated, online maps of network constraints, planned investment and the potential value of decentralised energy resources in networks across the Australian National Electricity Market (NEM). It fills a fundamental information gap by providing clear, consistent and timely information on network opportunities and constraints to renewable energy and demand management (DM) project proponents and others.

These “Network Opportunity Maps” will allow network service providers (NSPs), their customers, and proponents of non-network alternatives to develop a common understanding of the costs associated with additional loads and constraints in different parts of the network. The project is led by the Institute for Sustainable Futures (ISF) at the University of Technology Sydney and has received assistance under the ARENA Emerging Renewables Program.

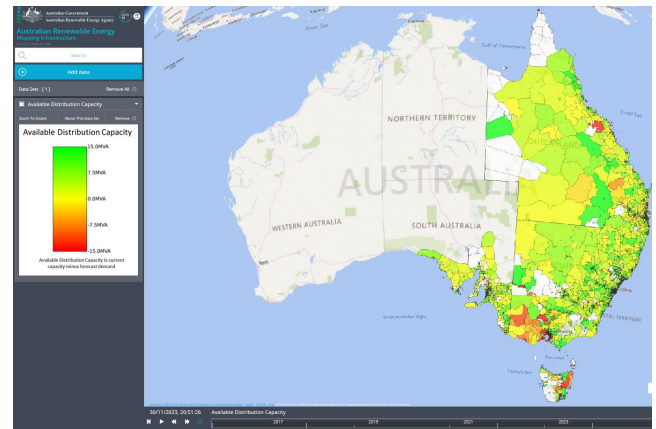
BACKGROUND

Decentralised energy refers to distributed generation and storage, energy efficiency and peak demand management. The absence of clear, easily accessible data about network constraints, costs and potentially avoidable investment has been a major obstacle to the development of decentralised energy in Australia. Consequently, decentralised energy has been deployed infrequently relative to network investments, and this has contributed to higher electricity bills.

While NSPs already report capacity and constraint data, this information is often difficult to access and interpret for those without specialised skills. The information is produced in different formats across the NEM and often lacks sufficient geographical and network support value data to be useful from a renewable energy or DM proponent’s perspective.

APPROACH

This project applies the Dynamic Avoidable Network Cost Evaluation (DANCE) model developed by ISF. Previous applications of the model involved labour intensive manual data processing and the information became quickly out of date. This project streamlines the network opportunity mapping process.



Network Opportunity Maps – Sample Map

ISF has worked with all NSPs across the NEM to develop a clear, standardised data protocol to populate an annually updated, publicly available mapping resource.

The three-year (2014-2017) project involves extensive engagement with NSPs, regulators and other stakeholders. The project involves six key tasks:

1. Consultation with all NSPs to refine the methodology, inputs and outputs
2. Development of a robust data protocol
3. Model and platform development
4. Publishing online network opportunity maps
5. Stakeholder engagement, including policy makers, regulators, decentralised energy proponents
6. Identifying a suitable ongoing host for the maps.

OUTCOMES

The key outcomes of the project will be:

- Nationally consistent, annually updated and publicly accessible, online maps of network constraints and potentially avoidable investment in electricity transmission and distribution networks.
- Facilitation of more rapid and efficient development of renewable energy and other decentralised energy resources.
- Support for lower electricity costs, higher energy productivity, greater network capital efficiency and stronger markets for renewable energy and DM.

Network Opportunity Maps now available at:
<http://nationalmap.gov.au/renewables/>

INSTRUCTIONS FOR REACHING THE MAPS

To access the Network Opportunity Maps online, please follow the steps below:

1. *Go to the Australian Renewable Energy Mapping Infrastructure (AREMI) web portal at <http://nationalmap.gov.au/renewables/>*
2. *Click 'Add Data' then click 'Electricity Infrastructure' then click 'Network Opportunities – ISF'*
3. *Select 1 of 4 Network Opportunity Map layers:*
 - *Available distribution capacity*
 - *Proposed investment*
 - *Annual deferral value*
 - *Peak day available capacity*
4. *Move time slider along the bottom of the screen to scroll through years from 2015-2024 (for available capacity or annual deferral value) or hours of the peak day (for peak day available capacity).*
5. *To view other Network Opportunity Map layers, click 'Add Data' again, deselect the current layer and select the new layer. It is best to avoid using multiple layers at once.*