ELECTRICITY NETWORK TRANSFORMATION ROADMAP

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MEDIA RELEASE

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No choice needed between Energy Security or Low Emissions – if we act now

A landmark report finds Australian energy consumers do not have to sacrifice security of supply or affordability to achieve a low emissions future, if action is taken now.

The two-year analysis by CSIRO and Energy Networks Australia has produced a comprehensive plan to keep the lights on, bills affordable and decarbonise electricity.

As Australian Governments meet to discuss energy security, the *Electricity Network Transformation Roadmap* confirms reliable supply can be maintained during Australia's transition to a more decentralised, clean electricity system.

Energy Networks Australia Chief Executive Officer, John Bradley, said Australian families would be better off by $414 per year on average under the Roadmap's suite of measures.

"The Roadmap would transform Australia's electricity system, enabling more choice and control for millions of customers while saving over $100 billion by 2050," Mr Bradley said.

"If we act now, the grid will be more secure and resilient, despite high growth in large scale renewables and two-thirds of small customers taking up solar and storage by 2050."

CSIRO Chief Economist Energy, Paul Graham, said a key Roadmap finding was that $16 billion in network expenditure could be saved by 2050 if the grid buys support services from customers with onsite resources.

"Under the Roadmap, traditional network investments can be avoided where it costs less to 'orchestrate' distributed resources in the right place at the right time and this saves money for all grid users.

"By 2050, over 10 million customers will own distributed resources like solar, storage, home energy management systems and electric vehicles which they can use to sell grid support services worth $2.5 billion per year.

Mr Bradley said the Roadmap would require collaborative action by grid operators, governments and other parties.

"Grid operators can act directly on many parts of the Roadmap including transforming their customer relationships, service innovation, smart grid operations and developing new incentives for customers," Mr Bradley said.

"However, a better energy future will need clear market signals. A key objective of the 2017 review of carbon policy must be securing a stable and enduring framework which will reduce the cost and uncertainty of decarbonisation.

"Australian electricity customers want an electricity future which avoids more frequent blackouts and bill shock while addressing global warming – this is their Roadmap," Mr Bradley said.

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Energy Networks Australia

CSIRO

A partnership between Energy Networks Australia and CSIRO

The Roadmap Key Concept Report

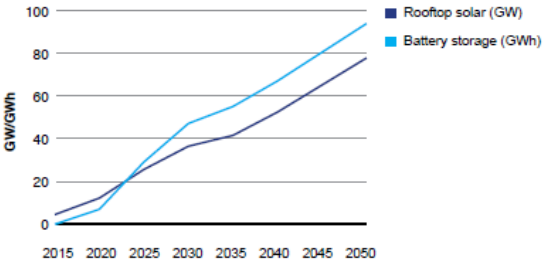
Based on two years work and extensive consultation the Roadmap identifies the complex challenges facing Australia's electricity system in the face of diversified energy supply and identifies a strategy for the future, as well as a deliverable plan to achieve it.

The report finds that with a co-ordinated plan in 2050:

- Customers retain security and reliability essential to lifestyle and employment
- Networks pay distributed energy resources customers $2.5 billion per annum for grid support services by 2050.
- Electricity sector achieves zero net emissions by 2050
- $16 billion in network infrastructure investment is avoided by management of distributed energy resources like solar and batteries
- Reduction in cumulative total electricity network expenditure of $101 billion by 2050
- Network charges 30% lower than 2016
- $414 annual saving in average household electricity bills (compared with roadmap counterfactual, business as usual, pathway)
- A medium family who cannot take up distributed energy resources is over $600 p.a. better off through removal of cross subsidies.

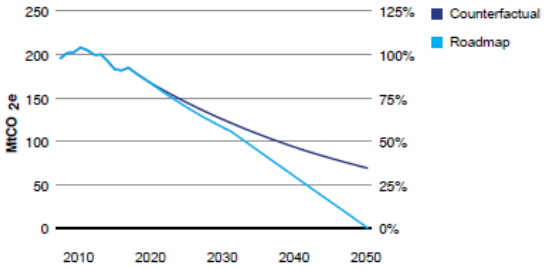
Rooftop solar and battery storage adoption

Projected uptake of solar PV and battery storage to 2050



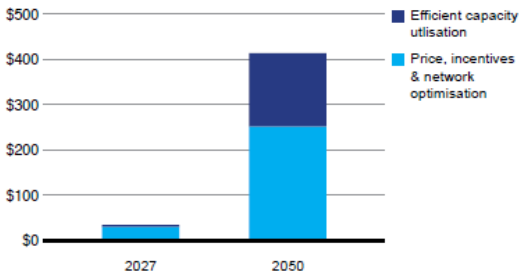
Carbon abatement

Assumed greenhouse gas pathways under *the Roadmap* and Counterfactual scenarios (Left axis: emissions, Right axis: percent abatement relative to 2005 emissions)



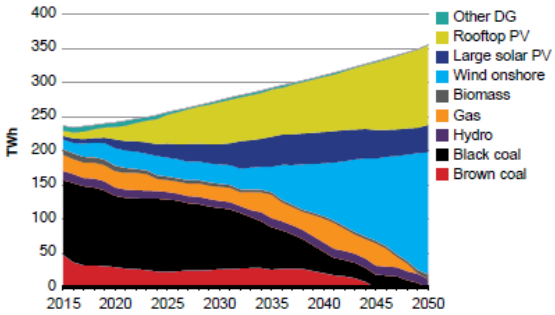
Savings for customers

Projected savings in average residential bills (in real terms) under the Roadmap scenario



Electricity generation mix

Projection of Australia's changing electricity generation mix to 2050



	Counterfactual			*The Roadmap*		
	Active $	Passive $	The Gap $	Active $	Passive $	The Gap $
Working Couple	$1,346	$1,811	**$465**	$1,123	$1,422	**$299**
Medium Family	$1,816	$2,601	**$785**	$1,428	$1,988	**$560**
Large Family	$2,794	$3,950	**$1,156**	$2,346	$2,734	**$288**
Single, Retired	$1,058	$1,730	**$672**	$883	$1,355	**$472**

Residential bill outcomes for selected Australian household types in 2050 under the counterfactual and Roadmap scenarios

CSIRO and Energy Networks Australia have released this concept report, to engage with the diverse electricity industry stakeholders, who to together with networks, will play a key role in helping to deliver a more efficient and affordable electricity future to the customers the system serves.

About the Electricity Network Transformation Roadmap

Australia's national science agency CSIRO and the peak national body representing gas distribution and electricity transmission and distribution businesses in Australia, Energy Networks Australia have partnered to develop an Electricity Network Transformation Roadmap (the Roadmap). The Roadmap is a two stage process running over approximately two years. For more information go to www.energynetworks.com.au/roadmap