MEDIA RELEASE

ELECTRICITY NETWORK TRANSFORMATION ROADMAP

2017-27

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Zero Net Emissions electricity - It can be done

Australia could beat its current international emissions targets and achieve zero net carbon emissions by 2050 according to new analysis from CSIRO and Energy Networks.

The landmark joint study, the *Electricity Network Transformation Roadmap*, confirms the grid can enable a zero net emissions system by 2050 and sets out measures to achieve it.

CSIRO Chief Economist Energy, Paul Graham, said that the Roadmap shows that it is possible to contribute to global targets to reduce emission while lowering the impact on household bills.

“CSIRO analysis confirms it is possible for the electricity sector to maintain a reliable, stable grid while achieving zero net emissions by 2050, in line with the aspiration of the COP 21 Paris Agreement,” Mr Graham said.

“On the way to a zero net emissions future, Australia’s electricity sector could exceed its share of current national carbon abatement targets, achieving 40% below 2005 levels by 2030.”

Energy system analysis concludes that an integrated set of measures will be required including stable enduring carbon policy frameworks and incentives to enable ‘orchestration’ of millions of distributed energy resources, like storage, electric vehicles and smart homes.

Energy Networks CEO John Bradley said the two-year Roadmap study involving hundreds of stakeholders found a national, integrated plan was needed to enable ambitious long-term abatement in the electricity sector.

“A low cost and secure transition of the electricity system depends on stable, enduring carbon policy and the Roadmap recommends an Emission Intensity scheme for the generation sector be developed by 2020,” Mr Bradley said.

“By contrast, carbon policy which could change dramatically at every election or differs in every state is a recipe for a high cost and less secure electricity service to customers.

“Analysis for the Roadmap indicates technology neutral carbon policy, like an Emission Intensity Scheme, provides least cost abatement and could save customers over $200 per year by 2030.”

Mr Bradley said decarbonisation would require transformational changes in electricity grids.

“Significant abatement is achieved by connecting millions of small scale renewables and our analysis forecasts Australia to have 6 times its current Solar PV capacity in ten years and 16 times current levels by 2050.

“The Roadmap also highlights the key role of transmission networks maintaining system stability in a low carbon future, with high penetrations of variable renewables.”

Mr Graham said the Roadmap analysis confirmed the critical role of thermal plant in balancing variable renewable energy output during the transition but this would need to be replaced over time by low emission solutions like battery storage, pumped hydro, gas fired generation with carbon capture and storage or Power to Gas hydrogen technology.

“Our current analysis points to a zero net emissions future enabled by battery storage and biomass but there is a fierce technology competition underway,” Mr Graham said.

“With so much technology innovation occurring, market frameworks which are technology neutral and allow the best solutions to emerge will deliver lower costs for customers.”

Energy Networks Australia

CSIRO

A partnership between Energy Networks Australia and CSIRO

Mr Bradley said the pathway to a zero net emissions future would present significant challenges which were manageable if governments, industry and customer advocates worked together in a national approach.

“During forums involving hundreds of stakeholders, there was immense support for Australia’s electricity system to prepare itself for a zero net emissions future.

“We’re hopeful the Roadmap analysis and proposed measures will support State and Federal Governments consider these issues during the carbon policy review scheduled for 2017.”

The Roadmap Key Concepts Report has been released for external consultation. Feedback has been sought by February 16 and the program will be finalised in March 2017.

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Figure 4: Historical and projected quantity of electricity sector abatement by location on the network (*Roadmap* Scenario)

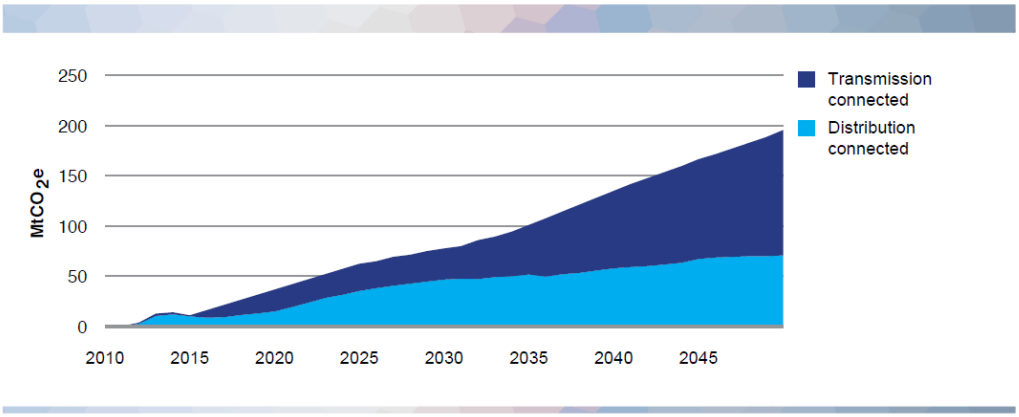
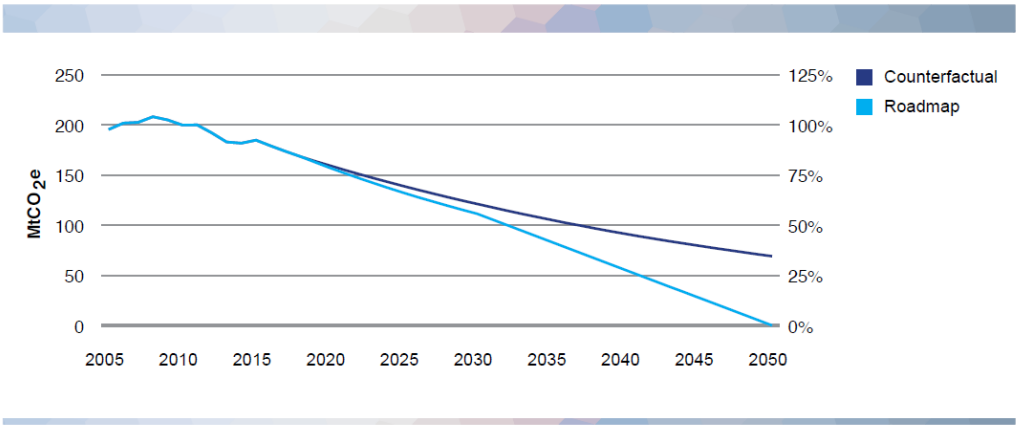


Figure 5: Assumed greenhouse gas pathways under *the Roadmap* and counterfactual scenarios (Left axis: emissions, right axis: percent abatement relative to 2005 emissions)



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