

Australia can meet carbon emissions target at zero net cost

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A new study by ANU has found Australia can easily meet its 2030 carbon emissions target by replacing coal-fired power stations with renewables at zero net cost.

At the global climate talks in Paris two years ago, Australia pledged to reduce emissions by 26-28 per cent on 2005 levels by 2030.

Lead researcher Professor Andrew Blakers said the net cost to meet this target with renewables was zero because the cost of electricity from new-build wind and solar power generators was below the cost of electricity from new-build fossil fuel generators.

"The cost of renewables includes stabilising the electricity grid with energy [storage](#) and stronger interstate powerlines to ensure that the grid continues to be reliable," said Professor Blakers from the ANU Research School of Engineering.

"As Australia grapples with the challenge of securing its energy supply into the future, our study shows that we can make the switch to affordable and reliable clean power."

Co-researcher Dr Matthew Stocks said Australia was installing about three Gigawatts per year of wind and solar photovoltaics.

"This rate is sufficient, if continued until 2030, for renewable energy to meet more than half of Australia's electricity consumption needs and Australia's entire Paris greenhouse emissions reduction target," said Dr Stocks, a research fellow at the ANU Research School of Engineering.

"The Snowy 2.0 pumped hydro energy storage project could provide half of the new energy storage required.

"The other half of the additional storage could come from more pumped hydro, batteries in houses and in electric cars, and improved demand management."

Earlier this year, ANU released an audit of 22,000 potential sites across Australia for pumped hydro energy storage.

Two thirds of Australia's fossil fuel generators will reach their end of

life by 2036, and will need to be replaced either by fossil or renewable [energy](#) generators.

Co-researcher Bin Lu said five coal-fired power stations would be retired on average five years early in the renewables scenario. Meeting the Paris targets by substituting gas for coal requires retirement of 10 coal stations an average of 11 years prematurely.

"The cost of balancing large amounts of renewable electricity remains low until renewables generate more than three quarters of [electricity](#) supply," said Mr Lu from the ANU Research School of Engineering.

More information: re100.eng.anu.edu.au/research/...emissions_target.pdf

Provided by Australian National University

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