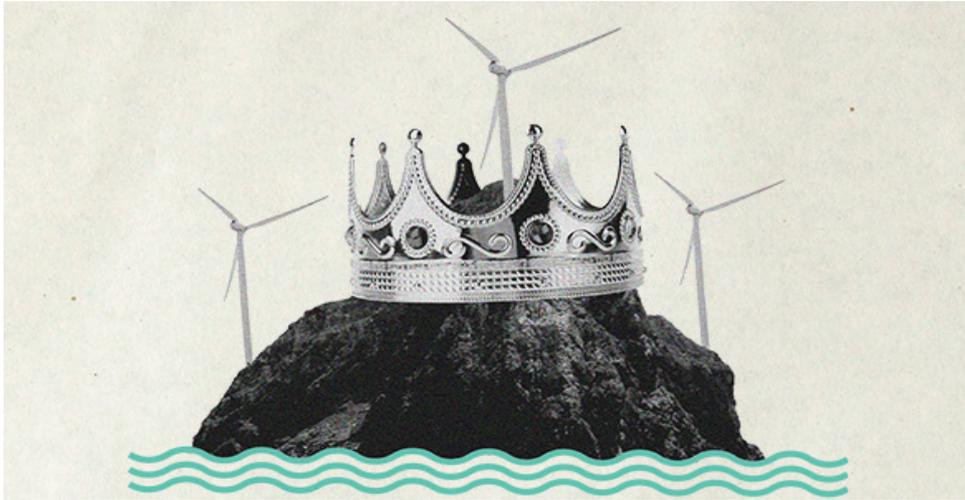


RENEWABLES ARE KING

The King Island Renewable Energy Integration Project sees King Island switch all its electricity use to renewable energy sources!



THE PROBLEM

Climate change threatens some of the world's most pristine and beautiful locations. This includes places like King Island off the north-west coast of Tasmania, which is known for having some of the cleanest air in the world. Unless climate change is tackled head-on, consequences for places like King Island will be dire.



Around 100 years ago, Hydro Tasmania embarked on a clean energy journey, becoming one of Australia's leaders in renewable energy development. While they have made great progress, the island still relies on expensive, shipped-in diesel fuel for its energy.

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So in 2012, Hydro Tasmania launched the King Island Renewable Energy Integration Project (KIREIP). KIREIP aims to reduce King Island's reliance on diesel fuel and cut its energy costs by \$4.5 million a year by providing 65% of its energy needs from renewables, and on windy days as much as 100%.

RENEWABLE ENERGY – RENEWABLE ENERGY IS ENERGY GENERATED FROM NATURAL RESOURCES THAT CAN BE NATURALLY REPLENISHED. EXAMPLES OF RENEWABLE ENERGY SOURCES INCLUDE SUNLIGHT, WIND, RAIN, TIDES AND GEOTHERMAL HEAT. RENEWABLE ENERGY TECHNOLOGIES RANGE FROM SOLAR POWER, WIND POWER, HYDROELECTRICITY/MICRO HYDRO, BIOMASS AND BIOFUELS FOR TRANSPORTATION.

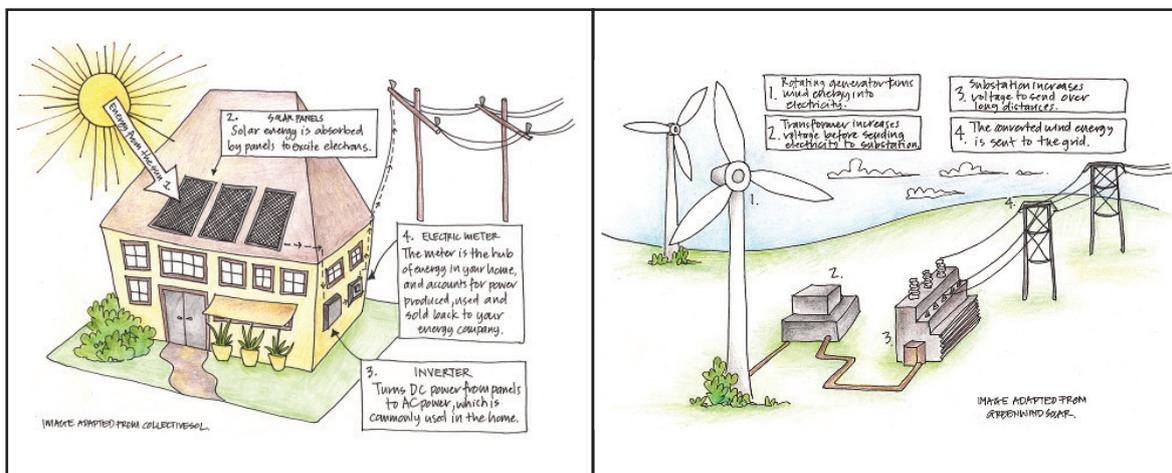
NON-RENEWABLE ENERGY – NON-RENEWABLE ENERGY SOURCES ARE FINITE RESOURCES THAT CANNOT BE REPLENISHED NATURALLY. MOST NON-RENEWABLE ENERGY SOURCES ARE FOSSIL FUELS, SUCH AS CRUDE OIL, NATURAL GAS, COAL, OIL SHALES AND TAR SANDS. NON-RENEWABLE ENERGY SOURCES CURRENTLY SUPPLY AUSTRALIA WITH MORE THAN 95 PERCENT OF OUR ELECTRICAL ENERGY NEEDS.

THE SOLUTION

Costing \$18.25 million, KIREIP brings together a range of new and existing technologies. Part of the project involved inventing and developing an off-grid power plant that combines solar panels, wind turbines and energy storage technology. In just a few years, the facility has managed to reduce emissions while ensuring the quality and reliability of power supply on the island.

This system enables all diesel generation to be switched off when there is sufficient wind and solar power to meet customer demand. The transition from diesel power to renewable energy, and back again if needed, is completely automated, which means that the station can even operate unstaffed.

Although there are remote area power systems in some parts of the world that can supply the energy needs of single homes or small villages, this is the first remote system on this scale that's capable of supplying the power needs of an entire community, including industrial customers, solely through wind and solar energy.



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MORE GOOD NEWS

The project has been a great success in several areas. Two of the most significant include:

1. Achieving the reality of 100% renewable energy

On several occasions since the new system has been in place, it has generated 100% renewable energy, non-stop, for over 24 hours – and up to 33 hours in one instance. This energy was used to meet the needs of the entire community, including residential and industrial loads, for a full day. This is the first time, anywhere in the world, that this power generation has been achieved such as scale for such an extended period of time!



(Image source: <http://www.kingislandrenewableenergy.com.au/stand-alone-power-systems/what-hybrid-grid-power-system>)

2. Creating a model for success

KIREIP gives a glimpse of the possible future of renewable energy, demonstrating how successful renewable energy systems can be. The solution could benefit off-grid communities on islands and in regional mainland Australia. Already, the success of the project is being replicated by Hydro Tasmania through a similar project on Flinders Island. Hydro Tasmania is also looking to take similar schemes to places throughout the Pacific and the South East Asia region.

THINK NOTHING CAN BE DONE ABOUT CLIMATE CHANGE? THINK AGAIN.

GENERATION YES.