



PROJECT FACTSHEET : PSC SOLAR EV CHARGER

Project Description

The PSC Solar EV Charger Project is intended to investigate the feasibility of running PSC electric vehicles entirely on solar generated electricity. Achieving this aspirational goal would result in benefits including PSC reducing our own fossil fuel consumption, air pollution, and CO2 emissions. We anticipate that the concept will appeal to individuals and businesses who own both solar arrays and electric vehicles, and who wish to exercise an ethical choice in selecting where the power for the vehicles comes from.

How it Works

PSC will continually monitor the power (kW) and energy (kWh) production at our own small solar arrays scattered around the globe. These arrays are primarily sized to offset the power consumed in our own offices, rather than to inject into the larger grid. Our first array rated at 10 kW is mounted on the roof of our offices in Wellington, New Zealand.

We will switch the charging supply to electric vehicles using small charging modules plugging into any 230 V outlet and with wireless internet connectivity. Our first electric vehicle is an Audi A3 e-tron hybrid plug-in, being trialled for all-electric commuting in Wellington, New Zealand.

PSC's Solar Charging Master Station will coordinate the power and energy production of the solar arrays with the power and energy supplied to the electric vehicles. The coordination will be based on two alternative power and energy reconciliation models.

National Power Model

Real-time National Solar Power Reconciliation

When PSC injects solar power into a network, then we are entitled to simultaneously charge EV's on the same network with the same amount of power.

Global Energy Model

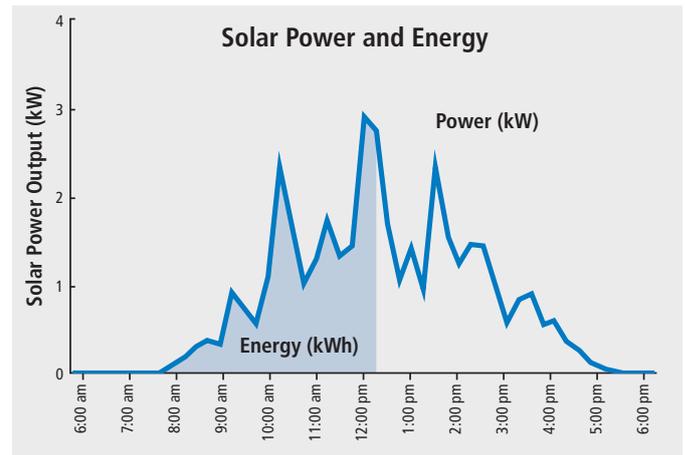
Historical Global Solar Energy Reconciliation

When PSC generates solar energy and displaces non-renewable generation, then we are entitled to later charge EV's anywhere in the world with an equivalent amount of energy (a form of 'Carbon Credits').

Electricity Pricing Arbitrage

When choosing renewables a sacrifice is typically made by paying a higher price for renewables over non-renewables. However in the case of the PSC Solar EV Charger there may be an opportunity of

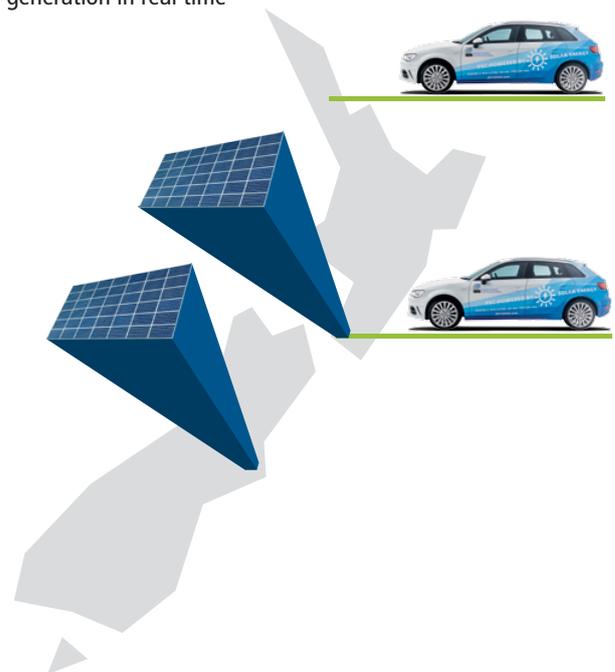
arbitrage in the electricity pricing resulting in making a profit within the EV Charger sub-business, depending on where the solar arrays are installed, and where the electric vehicles are being charged.



Real-time National Solar Power Reconciliation

'National Power Model'

- PSC solar panels around New Zealand inject power into the grid
- PSC electric vehicles are charged from any 230 V power outlet
- Charging control scheme switches chargers to ensure PSC vehicle charging power does not exceed PSC national solar power generation in real time



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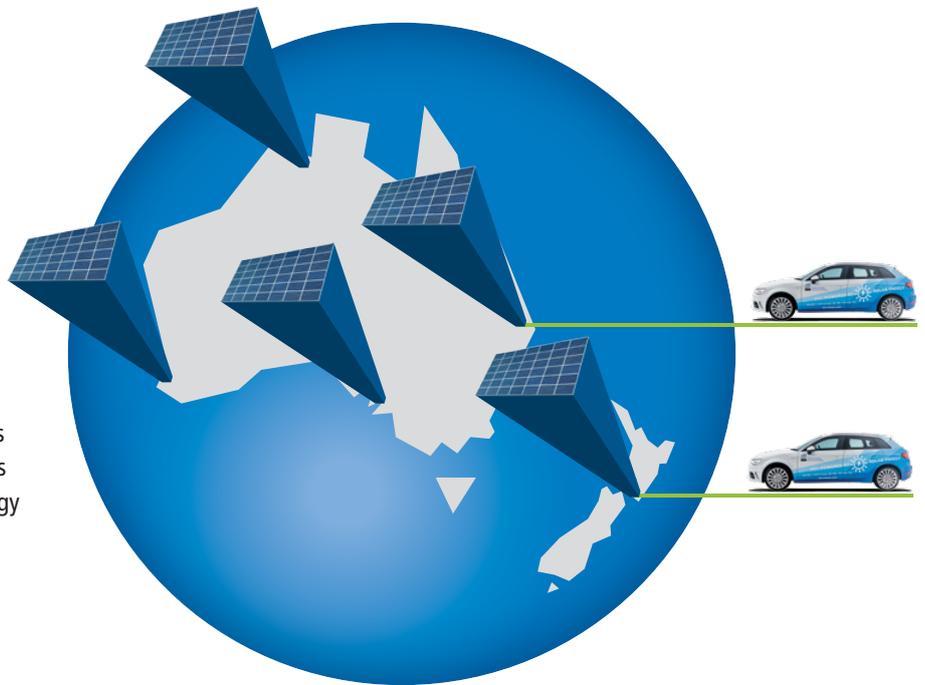
IMAGINE A NEW FUTURE

WE ARE, YOU CAN TOO

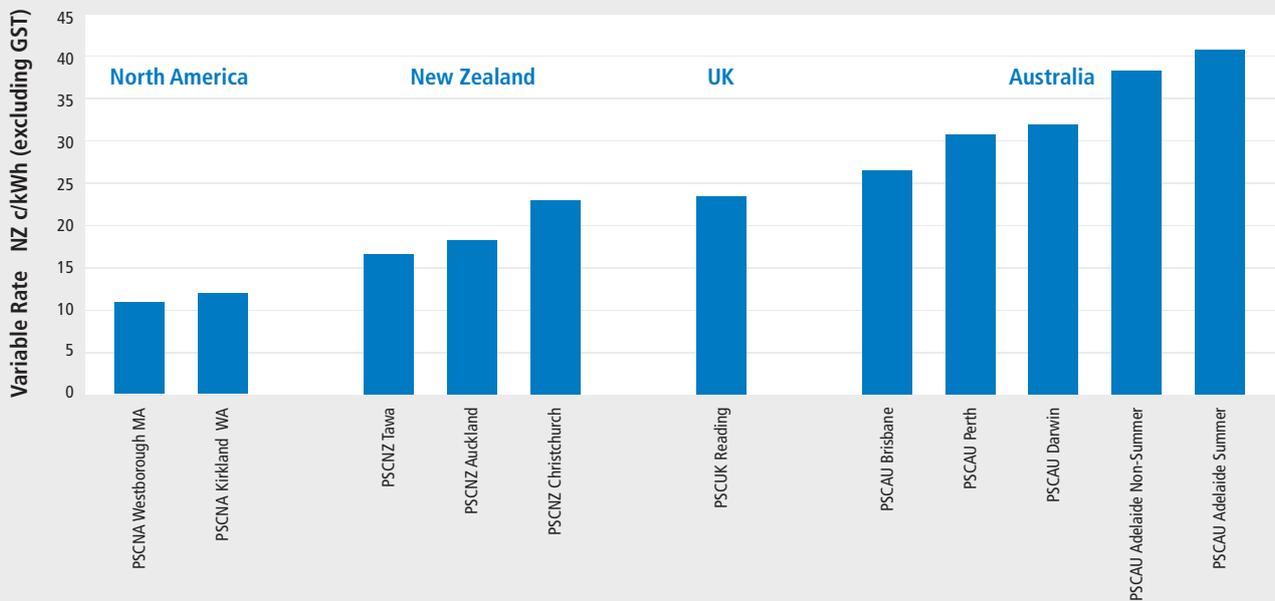
Historical Global Solar Energy Reconciliation

'Global Energy Model'

- PSC solar panels in Australia displace coal and gas fired generation
- PSC electric vehicles in Australia and New Zealand are supplied with locally produced energy
- Charging control scheme switches chargers to ensure PSC vehicle charging energy does not exceed historical PSC global solar energy production



Price for Electricity at PSC Offices



10 kW Solar Array on Roof of PSC Tawa Office



PSC's Audi A3 e-tron Plug In Hybrid Electric Vehicle



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