

A multi-vehicle EV charging station in a compact, affordable unit.

For decades, the lack of charging infrastructure has plagued electric vehicles and curtailed efforts to improve their adoption. This project aims to increase the number of charging locations and user experience, but most importantly in Australia's regional areas and major roads, where this infrastructure is still greatly lacking.

This design is an electric vehicle charging station, that combines the benefits of a multi vehicle charging station - a distributed power system that can recharge up to four vehicles simultaneously, with greater convenience and access to amenities - but in a more compact and affordable unit that is more easily installed and operated than existing stations.

As stated previously, the key market and context for this design is Australia's regional areas and along major roads. Through survey responses and information on websites such as Plugshare, it was clearly indicated that this major market is still being neglected, and underpinning the perceived view of a lack of charging infrastructure for these vehicles.

Another major finding from the survey was to improve the amenities of the existing infrastructure - toilets, lighting, refreshments etc. An affordable and efficient way of incorporating these features is to position these sites close to shops and other small businesses. Shop owners directly benefit from

having such a facility nearby, with increased traffic and publicity with EV driving customers. Industry partners also benefit, with the additional data and testbed opportunities in environments and markets they did not have access to previously.

The secret to this design's innovation is the distributed power system, with each charging bay connected to its own independent power system, stored

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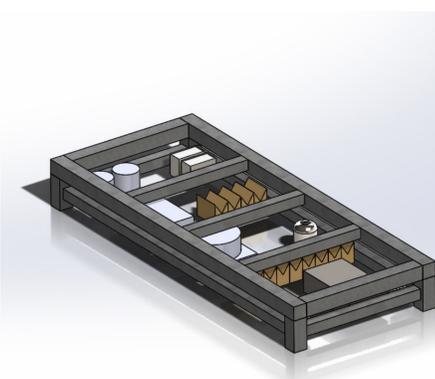
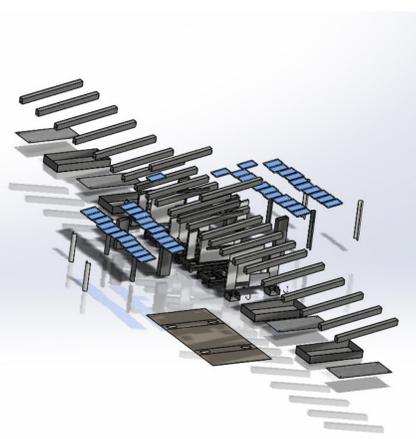
under each bay to increase usable elsewhere in the design. 450kW/h of power is supplied through grid connections, solar cells and battery storage for efficiency and prevent power loss.

Despite the additional research and development needed to bring this concept to market, the ReCharge stations no doubt provide a key piece in Australia's EV charging puzzle.



One of many possible locations - grassy field outside of Woodford, north of Brisbane. Out of the main town, but still in a convenient location.

Woodford's main street. Shops and businesses on either side, with a substantial parking area and small park off to one side. Similar layouts would be ideal for the ReCharge stations.



How each station looks inside. Left - an exploded view showing all of the major components, above - the electrical components that recharge the vehicles.



One of two support wall modules. Showing the ease of construction of the stations, and contains the plugs and mounts, touchscreen, support columns and beams, as well as the ventilation outlets.

