SEVA has taken to the Road!!

A newly branded support vehicle for the various projects travelled the back roads of VIC, NSW and QLD in a proving run for SEVA 'A' Auto, the continent crossing solar EV that will be the spearhead SEVA vehicle. Ultimate destination: Byron Bay, where it was hoped that a possible collaboration on SEVA 'B' Boat design, could be discussed with an e-foil manufacturer there.

The first thing to learn from the trip: You cannot dictate the weather! SEVA's vehicles must operate outdoors, uncovered, in order that the full solar benefit is received. In an earlier similar trip in the support vehicle, a sudden, violent hailstorm caused significant damage to the car, enough that panels had to be replaced. If this were the SEVA solar panels, no panel beater in the outback or even in the city, could rectify that situation. On this latest trip, storms again were predicted, and consequently, for all SEVA vehicles proper, it was decided each of those vehicles would come equipped with a suitable hail and weather protector cover that could be easily and quickly applied.

Storms were avoided on this occasion, but first lesson learned.

SEVA support vehicle at the Byron Bay lighthouse

Unfortunately, any collaboration with the e-foil company at this stage wasn't possible as a recent change of ownership restricted such collaborations – however, the Head of Product development did say that the SEVA 'B' Boat "looked cool though", and the boat project remains paramount to the solar car project as the aluminium chassis/hull is shared by both.

An array of 12 volt appliances, small solar panels and general electrical equipment were packed for this trip. For SEVA 'A' Auto, a lot will be expected of the 12V system. While it will be a modern day electric vehicle with, in its case a relatively small motive power battery, like all modern day EV's it will still be required to have a 12V system (for lights, accessories and start-up systems etc), but with SEVA vehicles we want the 12V to do a lot more. So, all those parasitic drains on the motive battery of a regular EV, air conditioning being the main culprit, will be handled by the 12V system and not affect any SEVA vehicles' range. Of course this will mean a specially designed AC unit (more about which later) and, specifically on this trip in the support vehicle, it means trialling a lot of small pv power packs and 12V items. These are generally portable items that can be placed inside the car but high quality solar cells have already been sourced for permanent fixture in a rear, as yet unattached spoiler, acquired for the support vehicle. This is the next project for SEVA and mimics the setup of the first model Nissan LEAF that was previously owned before the Nissan Note e-Power hybrid that is SEVA's current support vehicle.

Some good experience was gained with these small solar power packs (and gadgets), along with an appreciation of the need for a very effective cooling A/C system for any car hoping to travel in Australia's warmer regions (as if that wasn't known already!). SEVA's A/C will be an evaporative unit drawing little power from the 12V system and the next proving trip will be to South Australia to discuss there such a product with the country's largest manufacturer of evaporative air conditioners for the home domestic market; likewise, the desire to use Australian manufacturers wherever possible, Australia's only solar panel manufacturer will be visited there as well.

Check back with this website in the next couple of months to see the evaporative 12V A/C unit that's designed for use in SEVA 'A' AUTO's vehicle and the unique 12 volt+solar desiccant combined heater/dehumidifier that will be used when travelling in cold conditions. Also, how will the Aussie made solar cells fit with SEVA's unique requirements?

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*[As an addendum, it should be mentioned that during the more 'outback' sections of this trip, not **ONE** EV was spotted driving the same, in the main, pleasant to drive on country roads, through, at times, very pleasant, scenery. And, surprisingly, not even on the Pacific Motorway, with a less engaging 500km blast south, did EVs feature in any great numbers, if at all! This is testament to the availability of EV chargers on this chosen route and in all likelihood, any drive of distance, across this vast country. When SEVA 'A' Auto is available, it'll be more than comforting to know any drive, of any distance, will come with the ever-present on-board (pv solar) charging].*

SEVA takes to the Road2 – country VIC/SA and Adelaide

South Australia – Adelaide – was always an intended destination for SEVA, as Australia's only solar panel manufacturer, is there. A meeting had been organised with the Head of Innovation and Production to discuss the possible use of their PV cells in/on the bodywork of SEVA's solar EV's.

SEVA support vehicle at the 'home' of Australian solar panels and at empty chargers in Kingston SE on the Limestone Coast of South Australia, 'home' of the BIG Lobster!!

In a tour of the factory it was seen how the companies cells and manufacturing expertise had been used previously to make flexible solar arrays for SA teams competing in the World Solar Challenge. Hopefully, obtaining details of these arrays will allow their potential use to be assessed on SEVA vehicles. It was also gathered that a 'layered' cell (more efficient), under development with another Australian solar company making very flexible printed cells, could possibly be the best suited option to use for SEVA. The next RoadTrip will hopefully be to this printed cell manufacturer in NSW and, as can be seen in the photos above, the newly acquired top box, or pod, on the roof of the SEVA support vehicle, will be an ideal surface to coat with flexible cells for testing.

Unfortunately, no contact could be made with any aircon company so the innovative car evaporative and desiccant heater/de-humidifier will have to remain an in-house project for a later date.

S E V A

Aussie electric vehicles powered by the sun