

Low Cost Electric Vehicles

- Driving a Lead Acid EV
- Low Cost EV Specs
- Cost Reduction Ideas
- Chinese Kit
- Fast Conversions
- Opportunities for small Business

Driving Lead Acid

- 40km range, 2 seater Charade
- ADC 6.7 inch, Curtis, 120V, 10 D31 Yellow Tops
- It's great! Driven all the time
- 2200 electric km, 200km/week
- Range rarely an issue (for us)
- Family of 5
- ICE is a (smelly, inefficient) orphan

Driving Lead Acid

- As quick as ICE to 60 km/hr
- No gear changes
- Quiet
- Delight to drive, very popular
- Changes you – relaxed, coasting, short trips
- Cheaper than public transport
- Charged from Solar PV
- 4 cents/km (Electricity)

We Need More EVs

- We need more EVs on the road
- Get public and government to take notice
- EVs are not on the map at present
- Conversions can be expensive
- Major objection I hear is cost
- Plus conversion time and effort
- Range less important in practice (for many)

Lithium Conversion

- 90AH 120V Pack \$8000
- BMS \$1000
- Charger \$2000
- ADC motor \$2300
- Curtis Controller, pot box \$2500
- Adaptor plate, coupler \$800
- \$17,000 (etc etc)
- Nice car but \$ hard to justify today

Low Cost EV Specs

- ABS: 50% of Adelaide car trips 5km or less
- Build an EV for 60 km/hr commuting
- 80 km/hr top speed
- 72-96V rather than 144V
- 60 km range
- Lead Acid
- \$6,000 conversion

Cost Reduction Ideas

- Laser cut adaptor plate
- Standard adaptor plates and couplers
- Share CAD files
- Qty 10 conversions, bulk buys
- Same car: same engineering report
- Longer term: local controller and charger design and manufacture

\$6,000 EV

- Much more attractive than \$20,000 conversion
- Can use a rougher (cheaper) donor
- Or convert a modern car (\$5k Echo)
- \$6,000 = few years petrol + repairs
- \$2,000 lead acid pack every 3 years is down side (\$650/yr, or Lithium upgrade)
- BMS, \$2 petrol, small Lithium pack
- 8 EVs on road for the cost of one Prius?

Chinese Kit

- 96V
- 9 inch motor, controller, charger, pot box, fuse, coupler around \$3000 landed
- suitable for Charade/Barina/Echo
- needs 8 x 12V AGM (\$2000)
- Queensland distributor (Eugen)
- \$6,000 Barina, 80 km range, 80km top speed
- I am using this kit for EV #2 !!!

Fast Conversions

- Is it possible to convert an EV in 1 week?
- LPG conversion business model
- Standardise on cars
- Pre-fab battery racks
- Bulk adaptors plates and coupler
- Assemble loom on bench
- Qty 10 rather than Qty 1
- Proper tools, hoist, skills, experience

Opportunities for Business

- Market is there - people want them
- Eat the big companies lunch
- Businesses:
 - Couplers and adaptors for various models
 - Conversions
 - Controllers, Chargers, BMS
 - Service, Leasing
- 10 conversions for \$50,000 (Prius)?
- Now is a great time