

Sparky Automotive Ltd

# Juicemaker Fuel Extension

Battery Power Approaching!

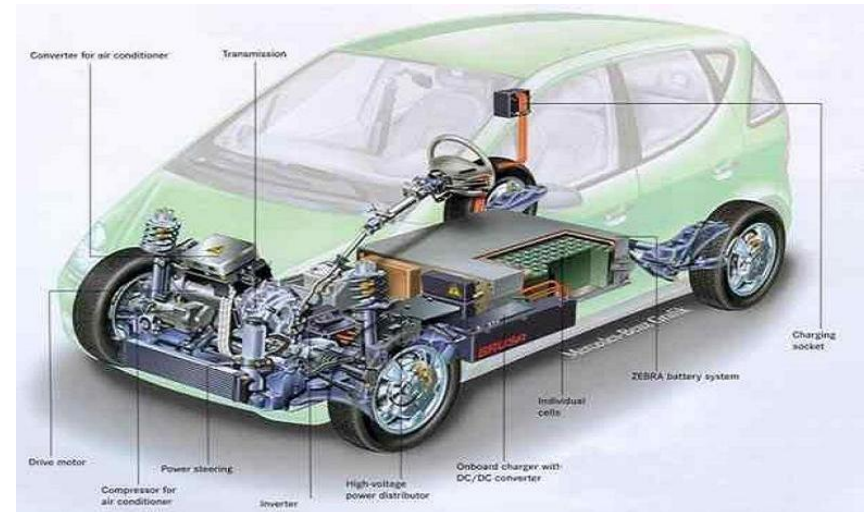
# Fuel Cost Comparison

- Mobile costs
- Say £1.00 per unit
- Petrol/Diesel
  
- Stationary costs
- Say £0.05 per unit
- Mains electricity
  
- 1 unit = 1 Kwh = 3.6Mj



# So why not run cars on electricity?

- - Some do, Tesla, Nissan Leaf, G-Wiz
- BUT, - Expensive to buy, limited range, slow to recharge and performance doubtful.



# Magic Fuel Supply!

- If only we could run petrol cars on electricity, - or had a magic box where you put electricity in one end and petrol comes out the other!
- (Let me know if you find one!)



# Partial Electric Solution

- Our proposition is that we attach a small electric motor to the car engine, which substitutes battery power for petrol/diesel
- Significant fuel cost reductions result
- Here's how



# Alternator Substitution

- Any car engine, petrol or diesel, has a number of peripheral units either powering it (starter motor), or powered by it.
- Fan
- Water Pump
- Alternator
- AC Compressor



# Replace alternator with electric motor

- The alternator found on any petrol or diesel engine can be replaced with a (say) 5kw electric motor. (3 bolts) and batteries
- This will save around 25% of the engine power and hence fuel consumption.



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# Here are the cost numbers

- Fleet vehicle uses C. £12.000 fuel/yr
- Partial electric assist, - C.25%, -£3,000
- Battery cost (10 unit) C.£2,000 (LI-Poly)
- Control unit, motor, fitting, cables, - £500
- Conversion pays for itself in under a year
- Second and third year, no additional costs



# Additional considerations

- Numbers neglect electricity costs, -fraction
- Not restricted to 5Kw, - possibly 10Kw or more
- May affect insurance group (more power)
- Should affect air quality class (lower emissions)
- Some effort required in design of control unit.
- Batteries need overnight recharge