

Not Dead Yet

The Life and Afterlife Of Electric Vehicles

Including a Practical Example

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Who Killed the Electric Car?



Myth 1: EVs Are Slow

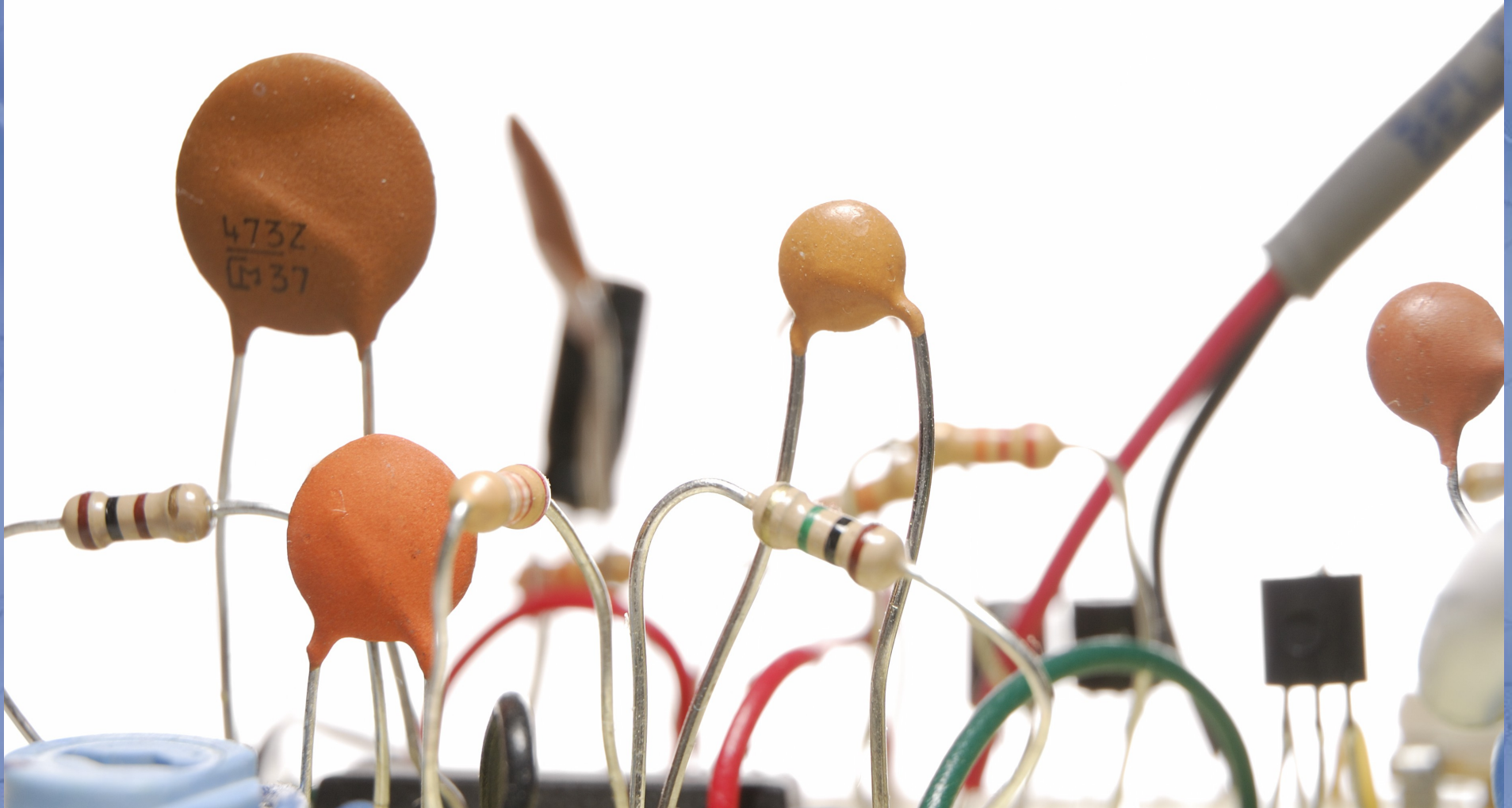
- Tell it to **NEDRA**
 - Maniac Mazda
 - 11.2@108
 - Killa-Cycle
 - 7.8@169
- Tell it to Tesla
 - Outruns a Carrera
- **BIG TORQUE**



Myth 2: EVs Can't Go Far Enough



Myth 3: EVs Are Complicated



Reality



So Why Build an EV?

- Environmental
 - Pollution
 - Resources
- Financial
- Whatever interests the builder

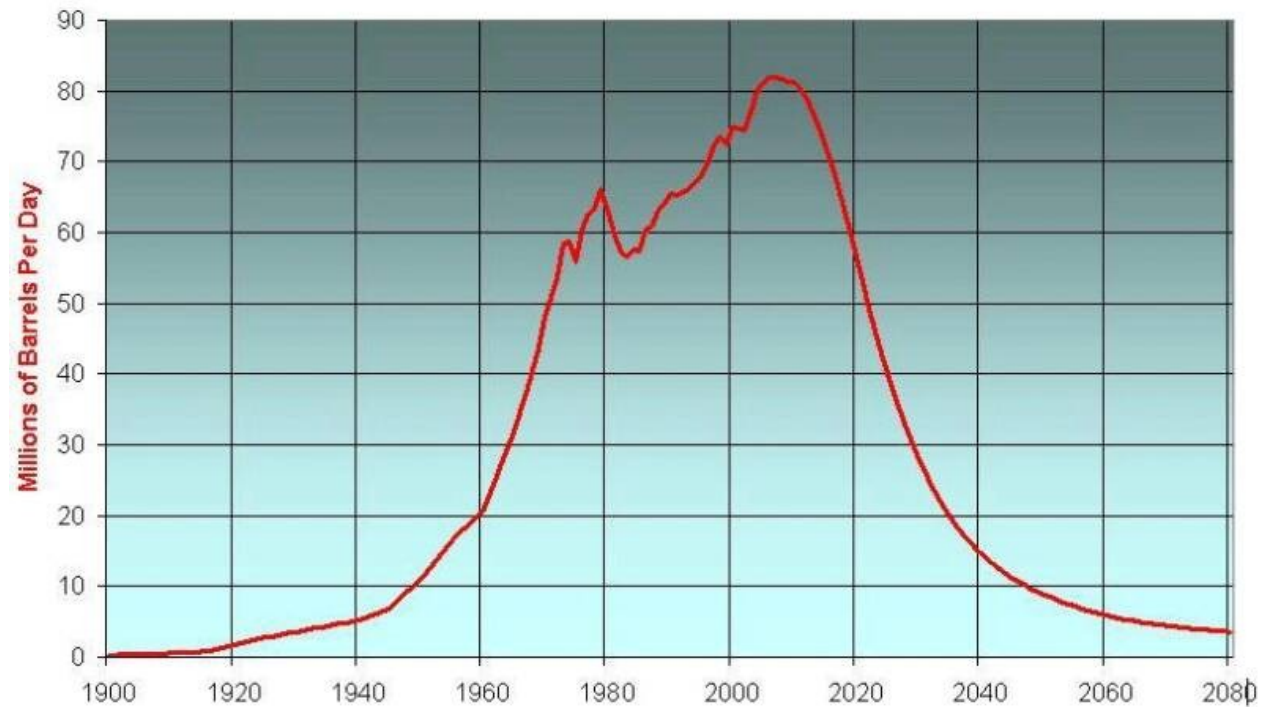
Pollution



Resources



World Oil Production 1900-2080



Financial



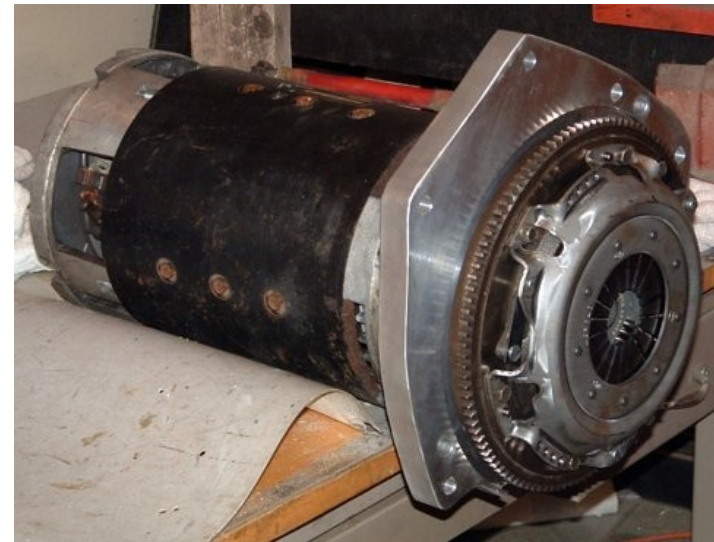
Other Reasons to Convert

- Prove something
 - Speed
 - Range
 - Testbed
- Quiet
- Audio
- Cool
- Reliability
 - My reason!



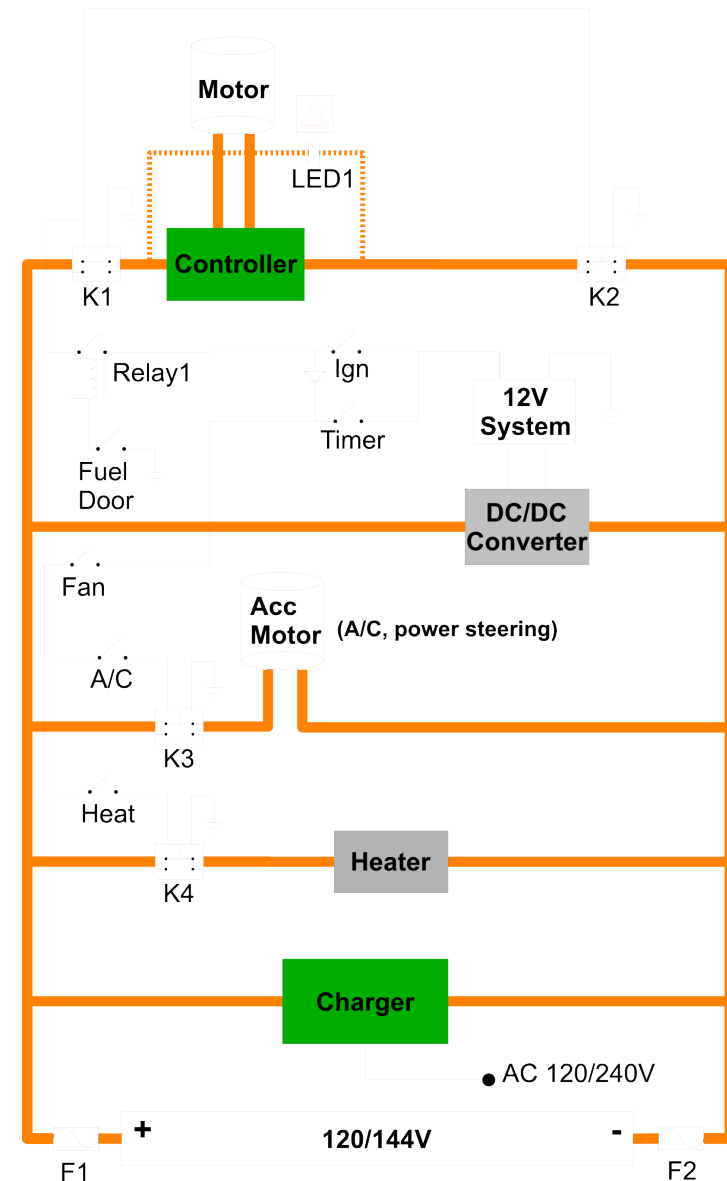
Initial Steps

- Determine requirements
- Choose components
 - Batteries
 - Motor
 - Controller



Plan

- A diagram will help you figure out the other fiddly bits you'll need
 - Fuses
 - Switches
 - Interfaces



Obtain the Car and Parts

Old and Busted



New Hotness



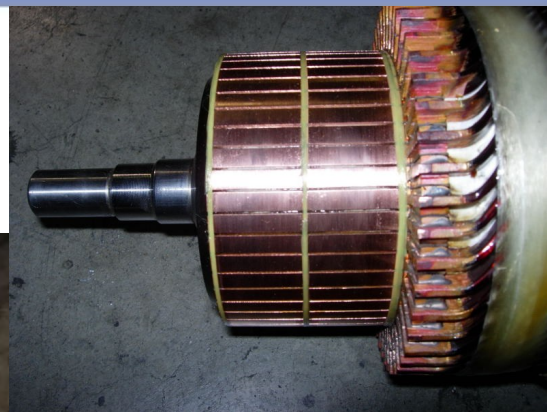
Assemble



Assemble More



Break It



References

EV Album

<http://evalbum.com/>

National Electric Drag Racing Association

<http://www.nedra.com/>

Average Commute

<http://abcnews.go.com/Technology/Traffic/story?id=485098>

Tesla record-breaking range

<http://www.pcauthority.com.au/News/159181,tesla-breaks-land-record-for-electric-car-on-a-single-charge.aspx>

Solectria Sunrise range

http://en.wikipedia.org/wiki/Solectria_Sunrise

Greenhouse gas emissions of US power stations generating for EVs

http://www.transportation.anl.gov/modeling_simulation/GREET/sample_results.html

CO2 emissions of coal stations generating for EVs

http://www.eia.doe.gov/cneaf/electricity/page/co2_report/co2report.html

EVs cheaper to run than gas cars

http://www1.eere.energy.gov/vehiclesandfuels/avta/light_duty/fsev/fsev_gas_elec2.html

EV cost comparison calculator

<http://www.ccds.charlotte.nc.us/~jarrett/EV/cost.php>

EV Calculator

<http://www.evconvert.com/tools/evcalc/>