

# Not Played Yet

## The Life and Afterlife Of Electric Vehicles

Including a Practical Example

Jude Anthony  
Hagerty High School National Honor Society  
2009-11-13

# Who Killed the Electric Car?



# Myth 1: EVs Are Slow

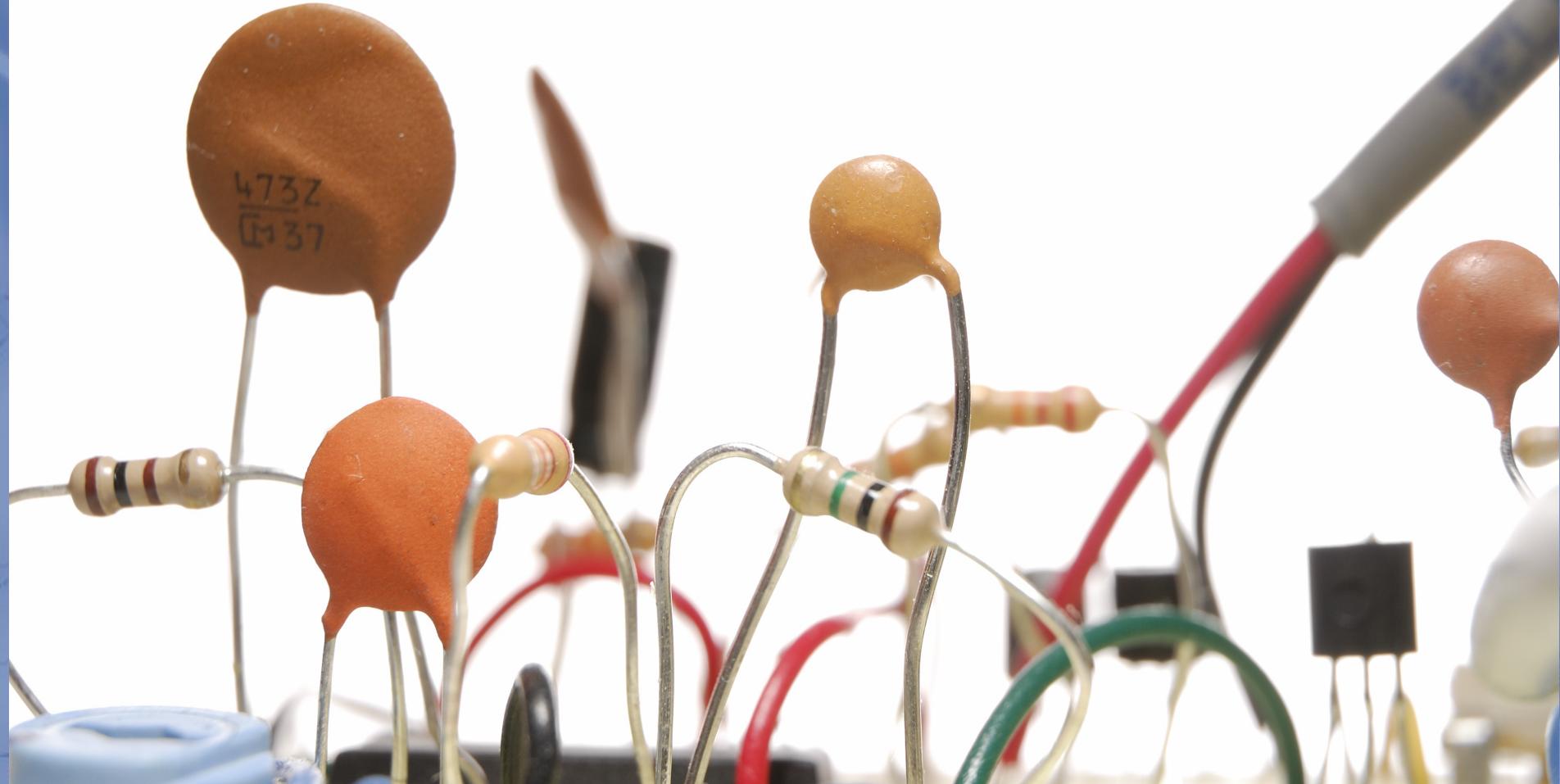
- Tell it to NEDRA
  - Maniac Mazda
    - 11.2@108
  - Killa-Cycle
    - 7.8@169
- Tell it to Tesla
  - outruns a Carrera
- BIG TORQUE



## Myth 2: EVs Can't Go Far Enough



# Myth 3: EVs Are Complicated



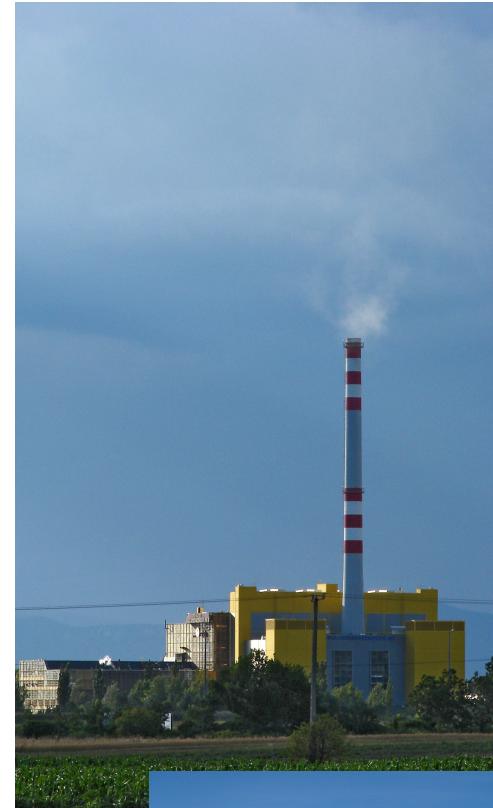
# Reality



# So Why Build an EV?

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

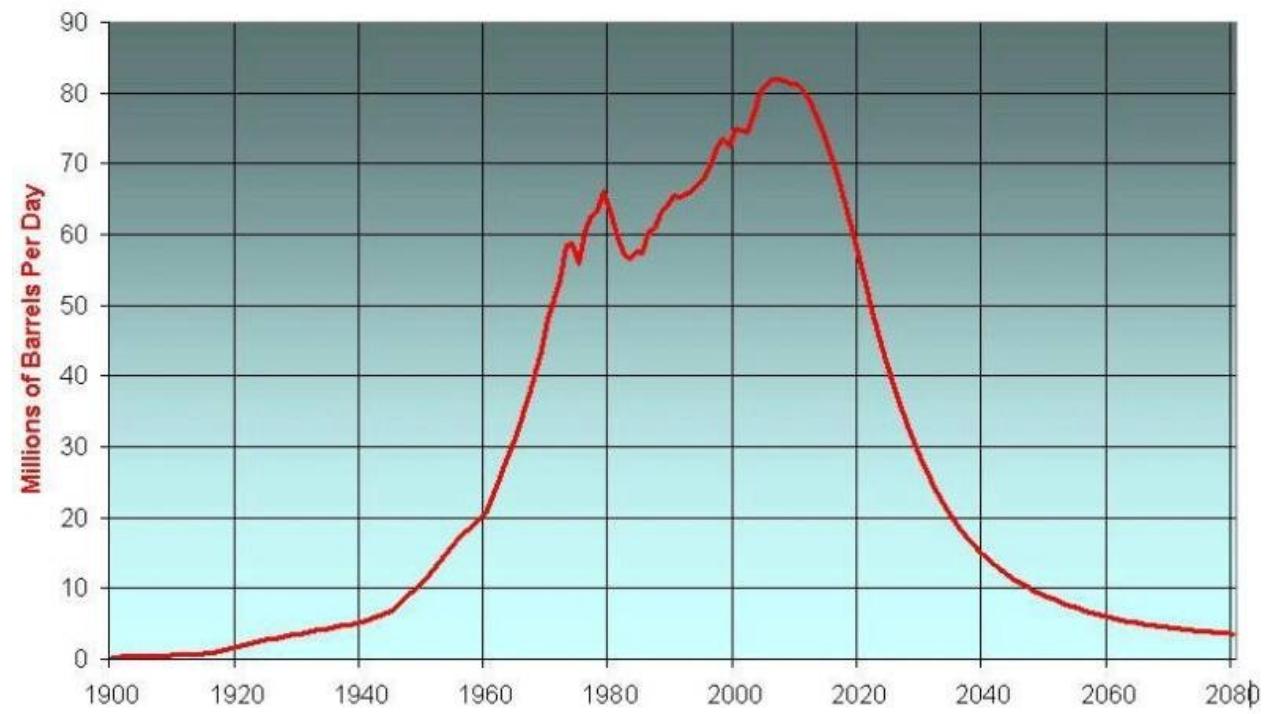
# Pollution



# Resources



**World Oil Production 1900-2080**



# Financial



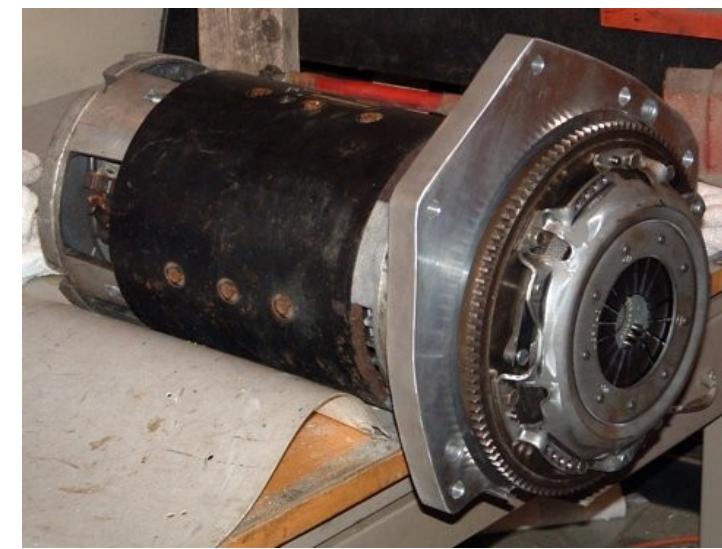
# Other Reasons to Convert

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



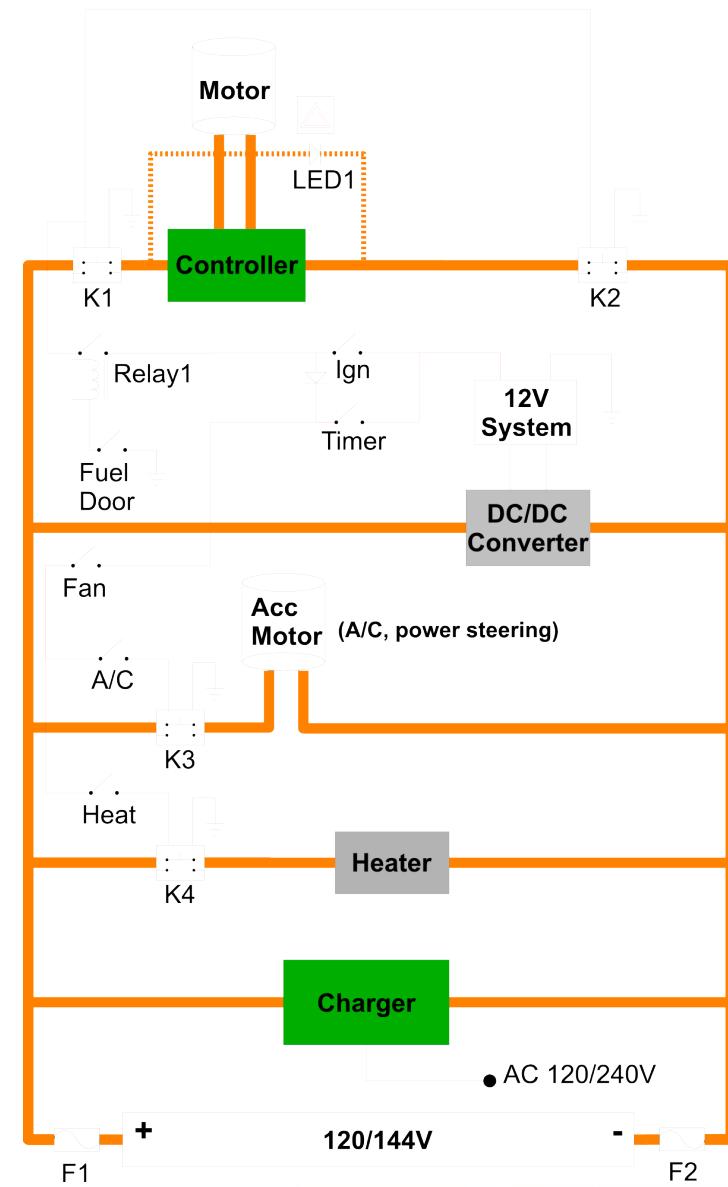
# Initial Steps

- 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

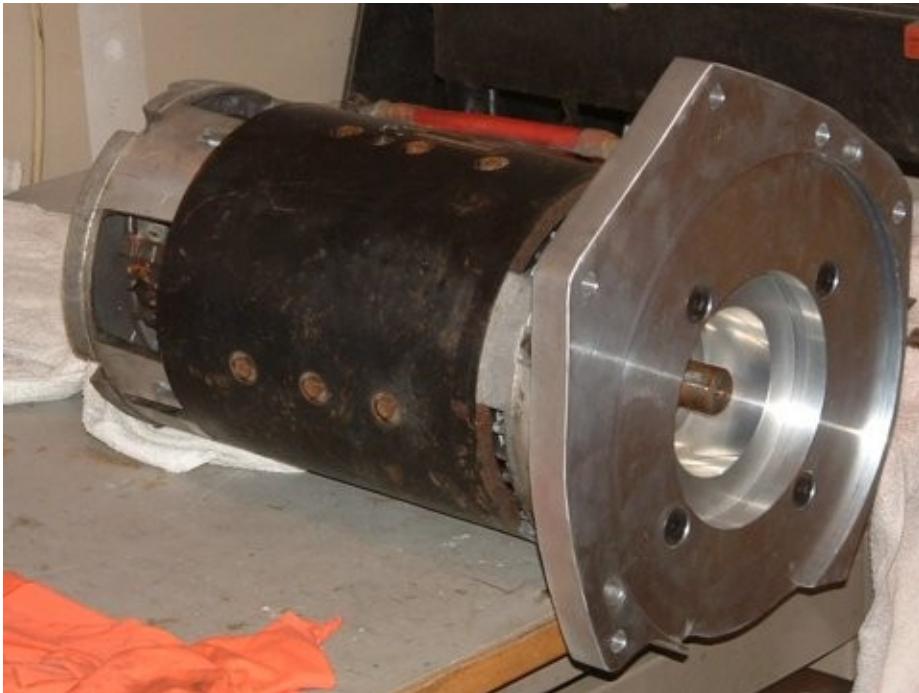


Old and Busted



New Hotness

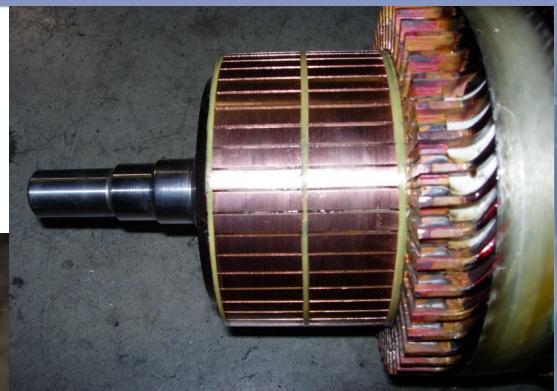
# Assemble



# 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](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](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](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](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/>