Cleantech Supercars

Who is Wrightspeed?

- Silicon Valley startup company
- In Burlingame
- Building Pure Electric Vehicles
- At the dawn of the Energy Age

Why Build Electric Vehicles?
It's the Future of Personal Transportation

- Energy efficiency:
  - Electric cars are 3x the efficiency of hybrids, 4x fuel cell vehicles.
  - ~80% efficient grid to wheels means
    - No other technology will make a big improvement, ever
    - Today's technology is good enough: no point in waiting

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The Future of Personal Transportation

- Energy Source
  - Electricity is the universal energy exchange mechanism.
  - Can be generated by burning fossil fuels, more efficiently than in cars, with less pollution, sited away from cities.
  - Or from renewable sources.

But Why Electric *Supercars*?

- An interesting property of electric drivesystems: no tradeoff between efficiency and performance.
  - i.e. we can
- Lower market risk for a startup company

The Wrightspeed X1 Prototype

X1 prototype wins against Carrera GT (605hp) at Sears Point Nov 8 ‘05

Wrightspeed X1 Prototype

- Street legal proof-of-concept car
- Performance test, on *street tires*:
  - 0 – 60 mph 3.069 seconds, 117 ft
  - 0 -100 mph 6.867 seconds
  - 0-100-0 mph 11.165 seconds
  - 1.2g turning and braking, 0.87g accelerating
- Still, 170 mpg equivalent energy consumption

Vital Statistics

- Batteries
  - 25kWhr high power Lithium Ion, 400V
  - 538 lb battery system
  - Delivers ~ 200kW to the power electronics
- Inverter and motor:
  - AC Propulsion 3-phase induction system
  - ~ 170kW at the motor shaft
  - 183 ft lbs torque, 0-6,000 rpm
  - 13,300 rpm limit
  - Regen braking, control integrated with accelerator
  - Traction control in drive and regen

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Vital Statistics

- Transmission: single speed, 8.25:1 reduction, LSD
- Chassis: modified Ariel Atom
  - Tubular steel, non-structural composite body panels
- Total car weight 1536 lbs
- Weight distribution 68 % rear 32% front
- 4-piston caliper front brakes, single piston rear

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Production Car

- Still at least 2 years away
- Similar to prototype, but every piece will change
- Larger capacity for more range
- Higher power for slightly higher performance
- Will use the Tesla charging standard