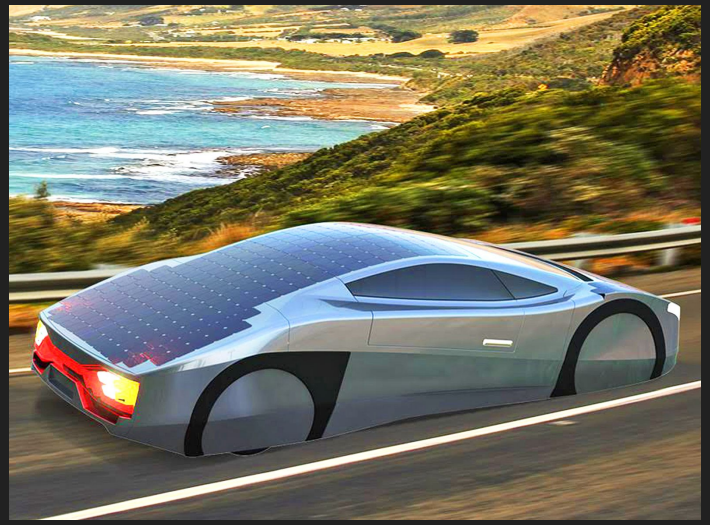
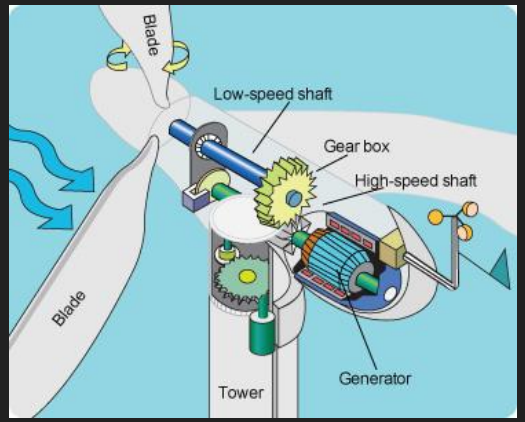


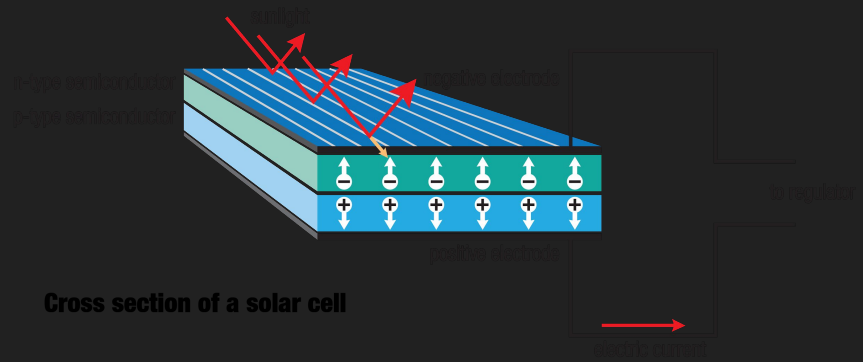
Wind, Solar, and Electric Powered Cars

By: Weston Clifford, Derek Gupta, and Julia Stowe

Utilizing Wind, Solar, and Electricity to Power Cars

- Cleaner alternative to gasoline and oil
- Solar energy collected by roof of car
- Wind energy produced through wind tunnels as car moves
- Portable wind turbines!?
- Electricity as backup power source for engine startup in little sunlight





Cross section of a solar cell

Relevance?

- Who? EVERYONE!
- Example: China and its pollution crisis
- Renewable energy, unlike gasoline
- Move towards greener future with global warming crisis and depletion of fossil fuels
- Transportation is one of leading produces of air pollutants

Economic Feasibility

- Utilizing cars with zero emissions would reduce air pollution (as opposed to typical cars) by over 99%
- The cost to install these would be worth the benefits of air pollution reduction in cities with air pollution crises, thought the benefits may take a while to be seen.

Why not just wind power?

- Wind created by cars motion cannot be used immediately to propel the car because car is not initially in motion
- System is imperfect, some energy is lost to friction between gears
- The car would eventually slow to a stop if relying on its own wind

Why not just solar power?

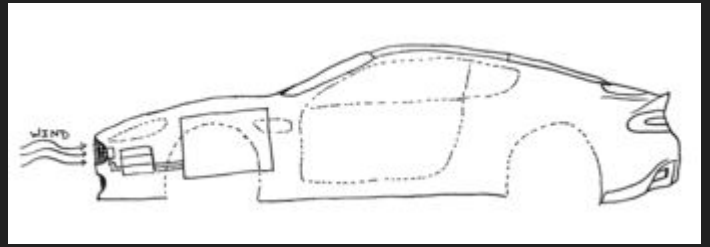
- Solar energy not very reliable in cloudy, northern areas
- Over-pollution in some areas limits sunlight

History of Research

Wind goes through front vent → Turns blades → Powers generator → Charges Car Battery

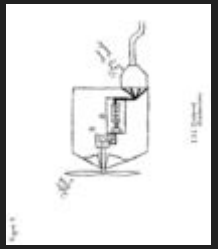
Hybrid Patent

- Used as a supplement, not a replacement
- Less time charging/ less $$$
- A plausible idea, not put into practical use yet



https://www.youtube.com/watch?v=STxTMftVwls

- Nigerian student creates car with only $6,000



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https://www.google.com/patents/US20120286513

History cont.

- Product has not been implemented yet because of the relative newness of the topic and design.
- Gasoline and oil industries still have a tight hold on the market
- Cost

WE WANT GREENER CARS

Future Research

- Combining all forms of energy to be stored in a single battery
- Efficiency of the wind and solar power generated in the system and actual reliance on electricity (though preferred to be kept minimal)
- Cost to produce

An Idealistic Future

https://www.youtube.com/watch?v=s6bU43RCIVw

- $16= over 5000 km

Take Aways

- Bamboo “portable” wind turbine
- Rechargeable Lithium ion batteries
- Design-lightweight strong materials, ROHACELL®

Conclusion

- A car powered solely by wind, solar, and electrical energy is possible.
- This topic should be explored more as global warming is becoming an international crisis. Transportation is a large contributor to greenhouse gas emissions.
- If a zero emissions car were to be created and made affordable, it can have an extremely positive impact on the planet for the future to come.

Questions?

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