Biodiesel and Electricity
Two interim steps to freedom from fossil fuels

1. My problems with petroleum

2. Biodiesel: On the water and on/off the road
   - advantages and concerns; real-world example: U.S. Army Corps of Engineers ship in San Francisco Bay using 100% biodiesel

3. Electric cars:
   - advantages and disadvantages; real-world example of the use of our Nissan LEAF

Why I drive an electric car
- in no particular order -

1. National security
2. Climate change (also local air quality)
3. Ocean acidification
4. Cheaper, after probable future petroleum price increases

Electricity
Cheap, widely available; can participate in renewable source program (PSE Green Power)

Efficient use of energy (100% torque at zero RPM)

Have owned an all-electric Nissan LEAF since August 2011
At that time:
- No sales tax in Washington
- $7,500 federal tax credit

Driven over 4,500 miles now
(Bellingham to Times Square NYC is 2,496 miles)

In this time, I have only recharged at home (and I have never had to walk)

The most common questions:
How many miles can you go on a charge?
How often do you need to recharge away from home?
How long does it take to recharge?
How much does it cost to recharge?

When recharging on 110v a meter can monitor the energy required for a complete recharge
Real-World Example with my Nissan LEAF:
- In November; into town with stops at bank, Hardware Sales, downtown for lunch, check on my mum at retirement home in Cordata, and Acme post office.
- Headlights and intermittent heater and defroster were used; passed another vehicle once.

 htons were mid-30’s inbound, upper 20’s outbound back home.

RESULTS:
58.5 road miles were traveled per trip odometer
19 e-miles were remaining on the dashboard readout*

19.6 kWh to recharge costing $1.98
(assuming 8.9¢/kWh basic charge plus 1.25¢/kWh for PSE Green Power)

This recharge required 16 hours at 110v
(would be < 8 hours at 220v)

*all travel was in “eco” mode