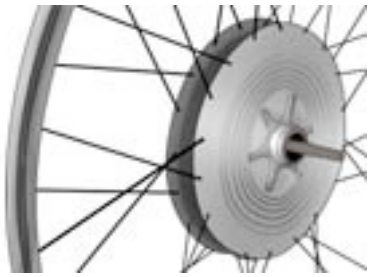
Specifications on hybrid human pedal/electric bike (solar-powered): On this bike the rider can choose whether to use strictly their own human-pedal power — or they can go variably with thumb throttle anywhere from zero-electric assist, all the way to fully electric power only with no pedal effort, even uphill. The bike goes to about 25 mph max. It can also be set to sense the rider's effort and assist that by that by a preset 75% assist, 150% assist etc. By running from our PV electricity it is a solar powered system; the console fits over existing bike frames and has regenerative braking too. This is a second-generation bike and is far more advanced than our first lead-acid battery bike.

Li-Mn Battery

The battery is key to any EV: here we're using Li-Mn (Lithium-Manganese) cells with good energy density (100-200 Wh/kg). This bike uses differing battery chemistry from our first electric car and the results will be of interest. Much lighter than lead acid of our Phase 1 bike, lighter too than a bike using Ni-Mh cells, the Li-ion is however costly. Battery communicates with motor & console:



350W Motor

Power is rated 350 W nominal and 700 W peak.
Nominal torque:10 N.m; Maximum torque: 32 N.m
4 power-assist levels: A motor gauge measures rider effort and can boost the assist from the electric motor power by 35%, 75%, 150% or 300%, according to the selected assist level.
Weight: 8.8 lb

Characteristics:

External case is Aluminum
4 regenerating levels: The battery can be recharged while riding downhill or upon braking.

Command Console

Power-Assist controls 4 assistance levels. An analog display for power from battery.
Generation mode controls 4 regenerative settings. Display of energy transmitted to battery.
Console includes a multifunctional odometer that displays the following information: - Current speed, - Tripmeter, - Odometer, - Chronometer, - Average speed,.
The control console includes a battery charge indicator that helps manage battery charge in order to prevent running out of energy on the return trip. However we are seeing less battery charge than we had expected and will watch battery performance over years.

Throttle

The throttle allows you to ride like a small scooter using thumb control. This ability is in addition to proportional power-assist. However at full throttle the range is severely limited.