**Engineering Requirements**

1. The system will broadcast wireless electricity in a ten mile radius.
   1. Receivers must be able to obtain electricity from the source anywhere within a ten mile radius.
2. The system must be set up and maintained. Users will need a receiver on premise to hook into the building's wiring.
   1. The system must be set up on test site.
   2. A working receiver must be able to convert the wireless electricity to 120 V AC usable in homes
3. System must operate indefinitely unless an outage occurs.
   1. The system is running while maintenance tasks are performed.
   2. The system is running with no outages, without range decreasing, and with no unexpected problems for two months.
4. No health concerns caused by the system
   1. Research of wireless electromagnetic waves on the human body conducted by top researchers.
5. No large magnets or uncertified electrical equipment within 100 yards of the coils while operating.
   1. Determine the materials that equipment can be made of to be within a 100 yard radius of the coils while operating.
6. The equipment must fit on a 2,000 sq. ft property. Height restriction up to 100 ft. Parts must be able to fit on an 18 wheel semi.
   1. Transport equipment on 18 wheel semi
   2. Equipment set up on test site of 2,000 sq ft.
   3. System height when fully assembled must be below 100 feet.
7. After installation, system will weigh 8-10 tons
   1. Weigh individual parts and verify the total is less than 10 tons
8. System must run without need of complete major part replacement for 35 years.
   1. All materials in the system must be certified for use of at least 35 years by testing part functionality and predicting the effect of the load on materials after 35 years.
9. Existing infrastructure in homes that will need only slight modification. (Receivers)
   1. Test system by installing a receiver, connected to a grid of 10 homes and compare data with a current hardwired infrastructure.
10. Existing concept
    1. Implement research already done in system design.