



**GETTING THE MOST  
OUT OF YOUR INDEPENDENT  
POWER SYSTEM**

# **I. SYSTEM CONFIGURATIONS**

- A. Generator/Loads**
- B. Generator/Battery/Charger/DC Loads**
- C. Generator/Inverter/Charger/AC Loads/DC Loads**
- D. PV and/or Wind Turbine and/or micro hydro/DC Loads**
- E. PV and/or Wind Turbine and/or micro hydro Inverter/AC Loads/DC Loads**
- F. D and E above with Generator**

# II. THE TWO WEAKEST LINKS

**Generators**



**Batteries**



# GENERATORS

- A. Gasoline, pros, cons, recommendations**
- B. Diesel, pros, cons, recommendations**
  - **Engines**
  - **Generator ends, AVR at a bare minimum**
- C. Sizing issues**
- D. Autostart issues – Set it and forget it? Forget it!**

# BATTERIES

- A. Types, Tradeoffs**
- B. Longevity issues**
- C. Maintenance issues**
- D. Sizing issues**



# BATTERIES

- E. Deriving Absorption Time**
- F. Bank temperature**
- G. Temperature Compensation**
- H. Paralleling, Cross-tying**
- I. Venting**



# LOADS

- A. Refrigeration Options**
- B. Well Pumps, Conventional vs. Constant Flow/Pressure**
- C. Heating Appliances --- Toyostove, Monitor, natural draft; gas ranges**
- D. Lighting**
- E. Phantom Loads**
- F. Washers/Dryers**

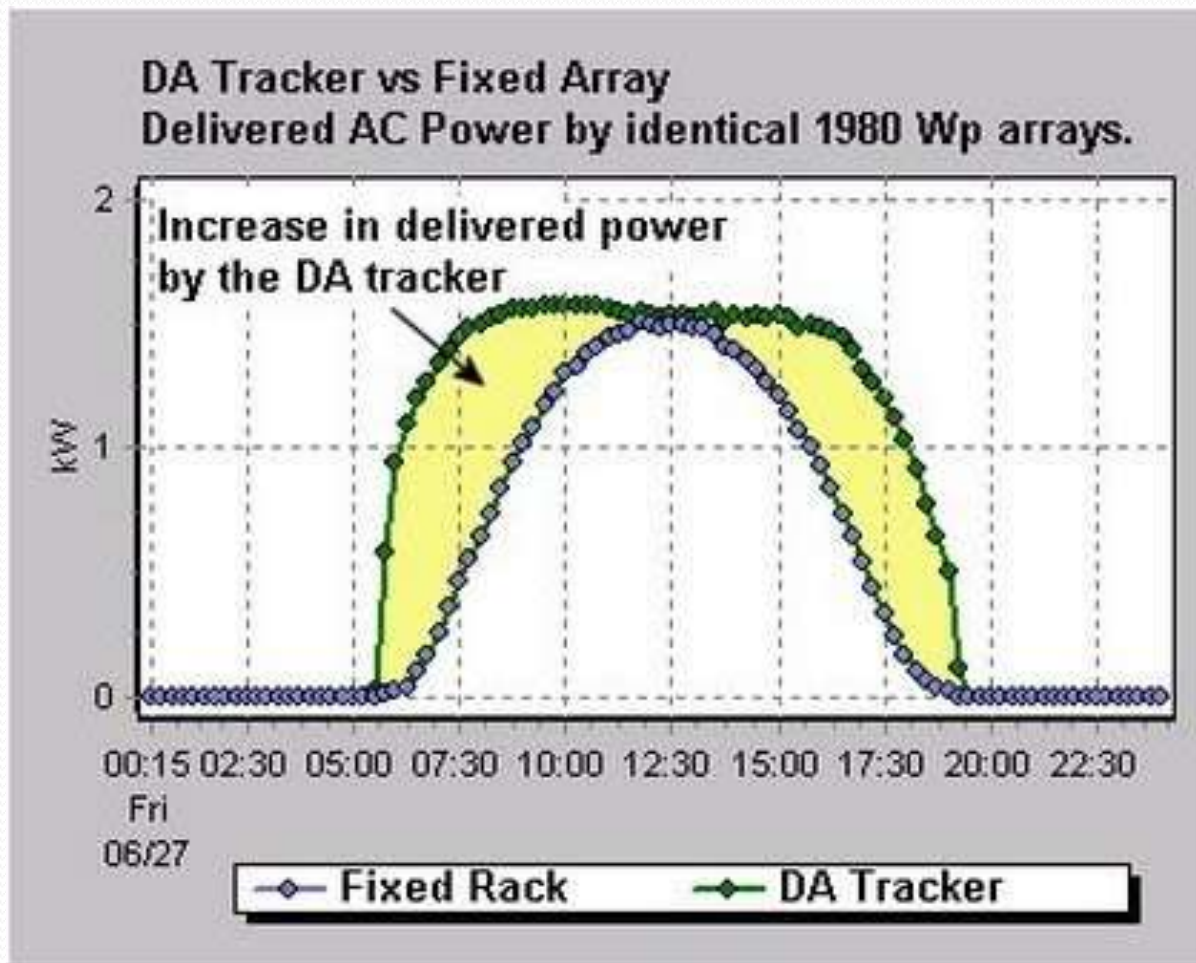
# IV. INVERTER/CHARGER SETTINGS



# V. PV CONTROLLER SETTINGS



# VI. TRACKING vs. FIXED



# VII. METERING OPTIONS

- A. Net Current and voltage at a bare minimum
- B. Merits of AH in/out, Battery “Fuel Gauge” type Meters
- C. Location –put it where you can see it



# **VIII. VOLTAGE POINTS**

**A. Voltage readings vs. Battery SOC --- relative and subject to interpretation**



**QUESTIONS?**