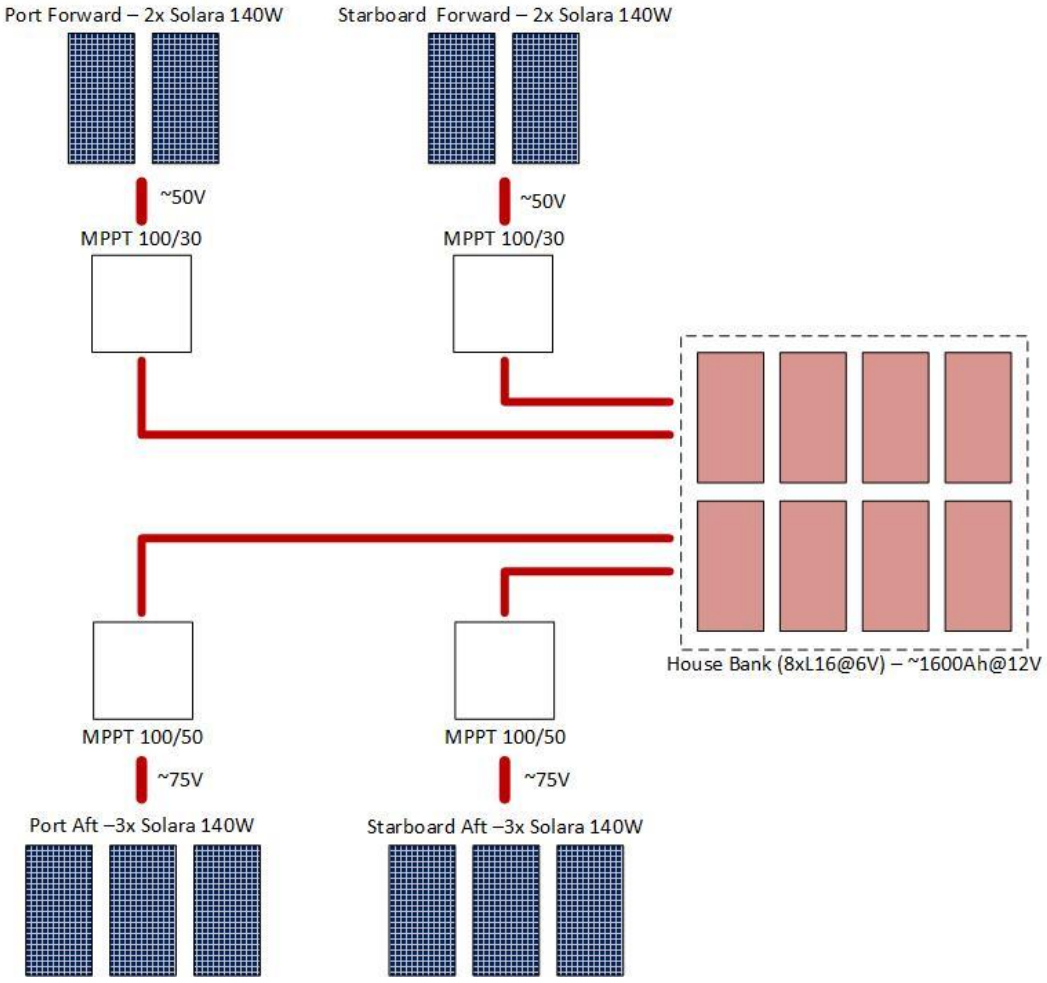
Hello ,

Just to present a few data point(s), here is what we have set up on ***SCOUT***.

We have 1400W of solar (flexible, walk-on panels) on the top of our N37. These are separated into four banks and drive four solar charge controllers. The four charge controllers charge our house bank (only) which is 1600Ah of AGM batteries.

You can see the ten 140W panels on the deckhouse in the photo below:

Here is a high-level diagram:



The four charge controllers are Victron and have a nice Bluetooth link to any smart device for monitoring progress/activity/history.

With this setup, we are pretty much self-sufficient 24/7 with all of our household appliances. We have a 2015-era LG 23cu ft fridge, a convection microwave, and a two burner induction cooktop in the galley.

Our typical daily consumption at anchor is about 200-250Ah (2400-3000Wh) with the fridge running and using the microwave, coffee maker and electric grill periodically, phone/tablet chargers, TV, lights, etc.

We average about 4500-5000 Wh generated from the ten solar panels on a full-sun day. By 12-1:00pm each day, the batteries are at 100% SOC.

All of the above was on the boat when we bought it, 3 years ago, courtesy of some very thoughtful owners (Avocet).

With this setup, we have about 2-21/2 days of ZERO sun available, with our typical use, before the house bank gets to 50% capacity. With full sun, we are at 100% SOC by noon on the next day with our typical usage. This is with no hot water or air conditioning, of course.

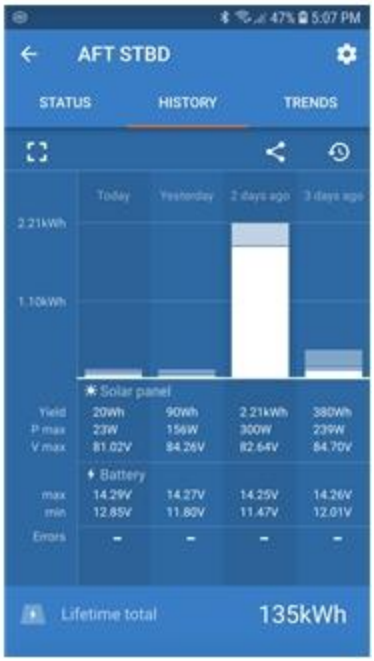
What I have done since purchasing the boat with the above system is:

1) Convert the 24V thruster charge system to a Victron DC-DC charger which uses the 12V house bank as a source and charges the 24V thruster/windlass bank.
2) Convert the dinghy to all-electric with a 6hp electric outboard and a 24V 75Ah battery bank in the bow locker.
3) Convert the water heater to low(er)-wattage and smaller tankage and connect it to the inverter. This allows for a couple of hours of heating in the afternoons after the house batteries have come up to full charge.

I recently took a solar power diary one of the days after we converted the water heater to kind of track where we were in real time. Here are my raw notes from that.

> *1st week of April, North Florida*
> *Bow facing east most of the time*
> *72deg daytime, full sun, 55deg night*
> *Static boat loads average 8 to 14A @12V, 24/7 in current climate (refer, computers, USB, etc.)*
> *--*
> *Day 1/1:00pm: Anchor down - 100%SOC*
> *Day 1/6:00pm: Induction cooking range and microwave ~20min each. TV.*
> *Day 1/9:00pm: Bed, 95%SOC*
> *Day 2/7:00am: 88%SOC*
> *Day 2/7:15am: Coffee maker and short microwave time, 87%SOC*
> *Day 2/11:30am: Lunch bread toast 85%SOC, charging showing +23A after loads*
> *Day 2/12:30pm: 90%SOC, charging showing +40A after loads*
> *Day 2/2:30pm 100%SOC, charging showing +17A after loads*
> *Day 2/2:30pm Turned on water heater, discharging showing -42A after solar input (72A total consumption)*
> *Day 2/3:30pm Turned water heater off, 98%SOC, charging showing +37A after loads*
> *Day 2/5:00pm 100%SOC, 20A consumption, charging showing +4A after loads (HOT WATER!)*

Actual watts output per Victron Bluetooth link shows
890W+1130W+840W+2210W=5070Wh produced for all of Day 2:



Anyway, that's just what we currently have set up – hope the data helps some…..