

Before considering solar – part 1

Assess usage and waste

- Identify power hogs (Kill-a-Watt; metering smart plugs)
- Study your hydro bill (how often are you in tier 2?)
- Look for heat leaks (infrared camera)
- Encourage the local public library to stock an electricity ‘waste and usage kit’
- City of Nelson / Nelson Hydro teamed up to take IR photographs of houses to identify houses in dire need of better insulation

Behavioural changes

- Turn lights off when you leave a room
- Do you really need that wine cooler?
- Use washer and dishwasher only when full
- Clothesline in summer
- Walk to the store

Before considering solar – part 2

The low hanging fruit – conservation

- Decrease temperature of hot water tank
- Decrease thermostat setting and in rooms you use less
- Put electronics (computer, router, modem, TV, printer, etc) on power bars or electronic timers (not top-set boxes)
- Don't purchase a plasma TV
- Switch to LED lights
- Unplug freezer when empty
- Run washer at 40 °C

Before considering solar – part 3

Not-so-low hanging fruit – long term investments

- Insulate your home (triple glazing, insulating basement and attic, etc).
- Consider purchasing a mini-split heat pump for heating and cooling
- Replace hot water tank with on-demand (electric) heater or with solar thermal
- Electric vehicle
- Consider a fridge without a freezer

Congratulations, you just cut your electrical demand in half

Mind you, you are still consuming 30% more electricity than Central Europeans



How much solar is right for you ?

Average BC household consumption is 12,000 kWh per year (\$100/month in electricity cost; grid connection, 'rider' and taxes on top); with conservation efforts this decreases to 7500 kWh/y

On Galiano, 1 kW of PV produces about 1100 kWh per year

To break even over the year, your solar install should be around 7 kW, for 7700 kWh/y, *i.e.*

23 panels (305 W) or

21 panels (330 W). (We used 255 W panels in 2015).

If you own an electric vehicle add another 8 modules (2.5 kW) to drive 15,000 km/year.

In 2015, our discount over the 'normal' costs for solar hardware was close to 30% and included 25 y warranties on all components.

What about the ROI ?

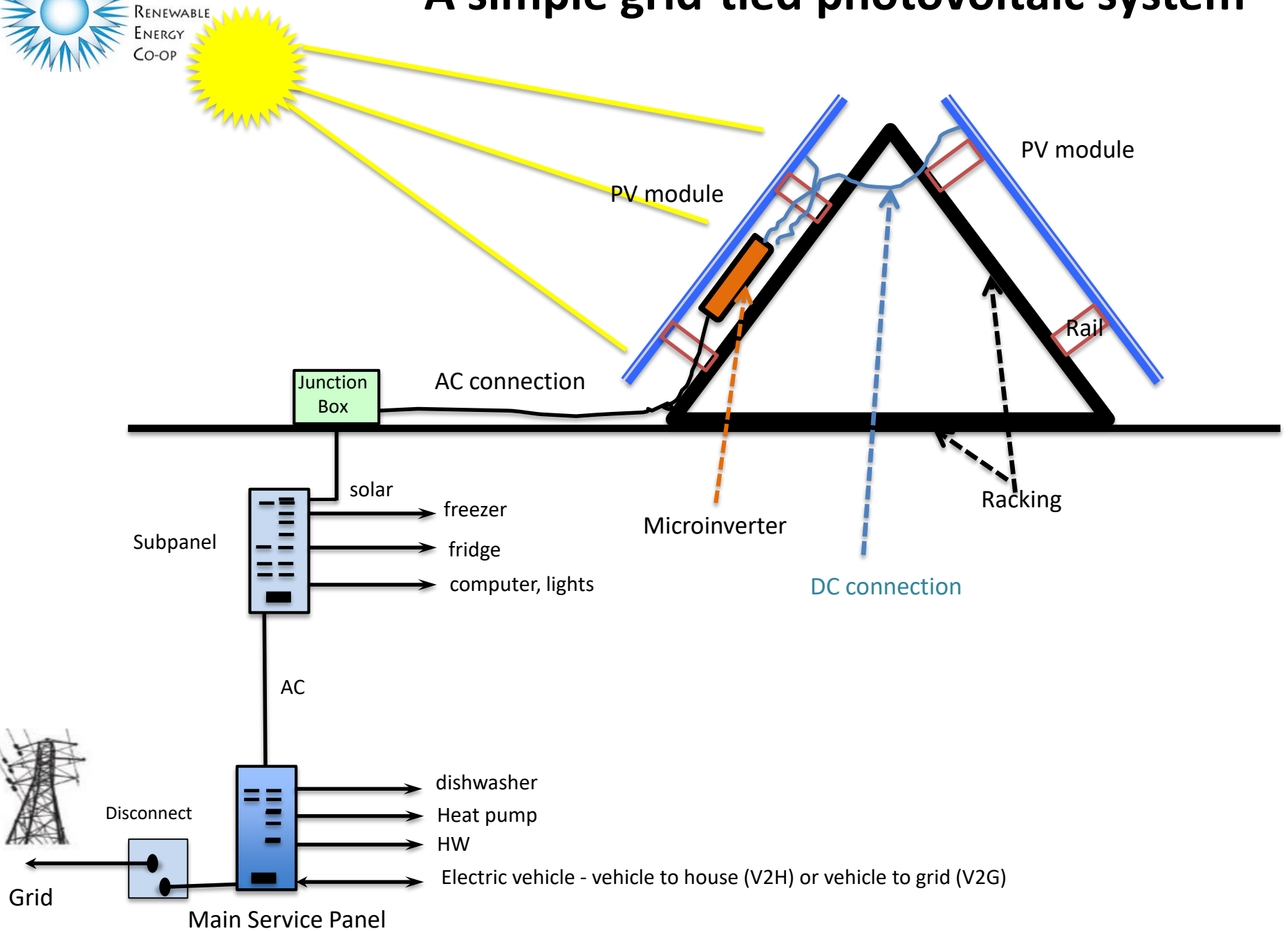
- In 2015, we didn't think about return on the investment
It simply was the right thing to do! And we just wanted to get started to decarbonize and live with solar
- Turns out, there was a financial ROI after all, in addition to the bragging rights
in 2015, the ROI was around 3% to 4%
- In 2018 – it's a different story
 1. PV costs (hardware; installation) have dropped over 20%
 2. BC Hydro rates have increased; will continue to do so**in 2018, the ROI is in the 5% to 6% range**



What are we waiting for?



A simple grid-tied photovoltaic system



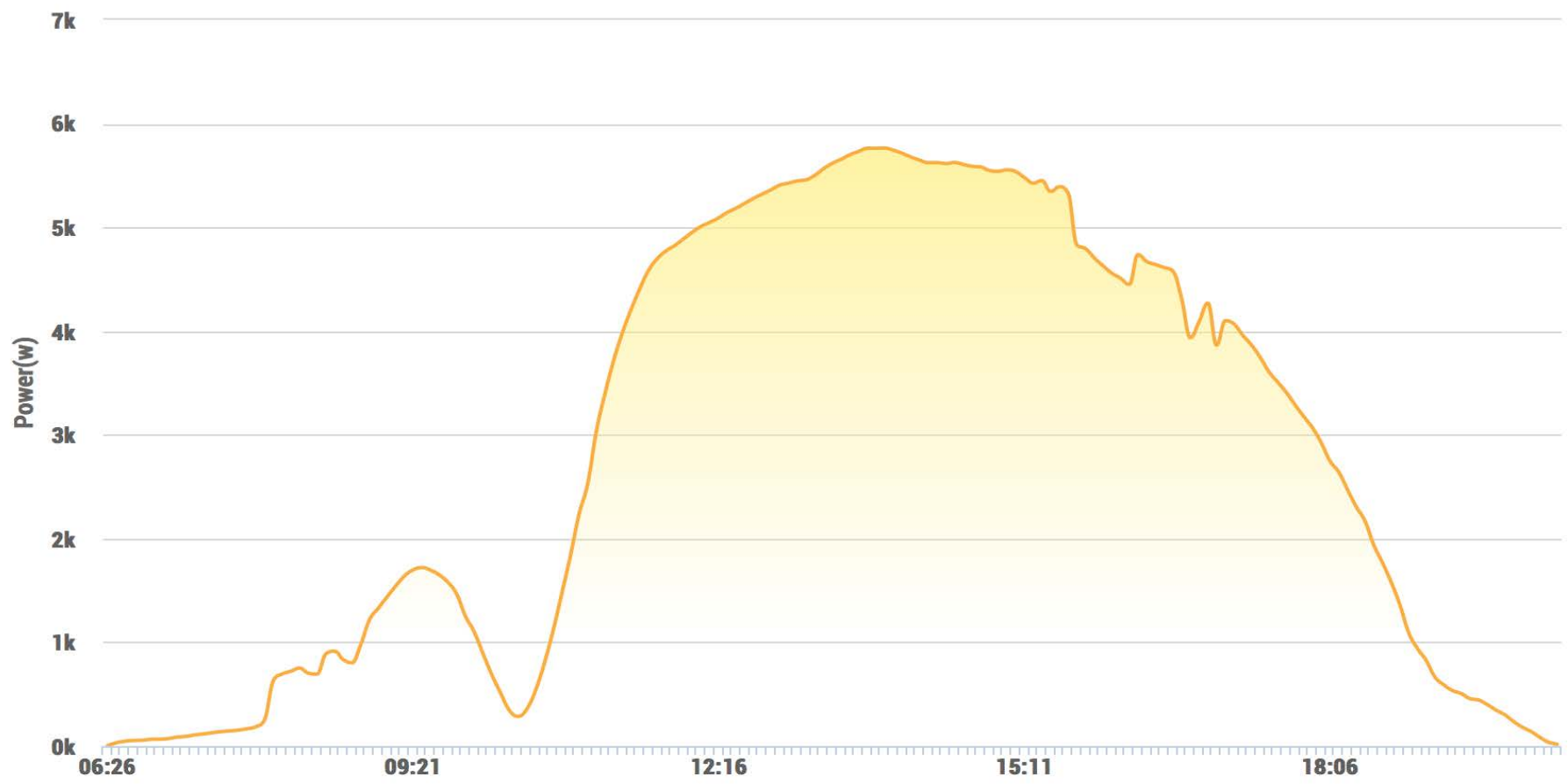
Solar production on Aug 21, 2017 !

Date 2017-08-21

Query

Export

Power Curve for 203000017564 in 2017-08-21

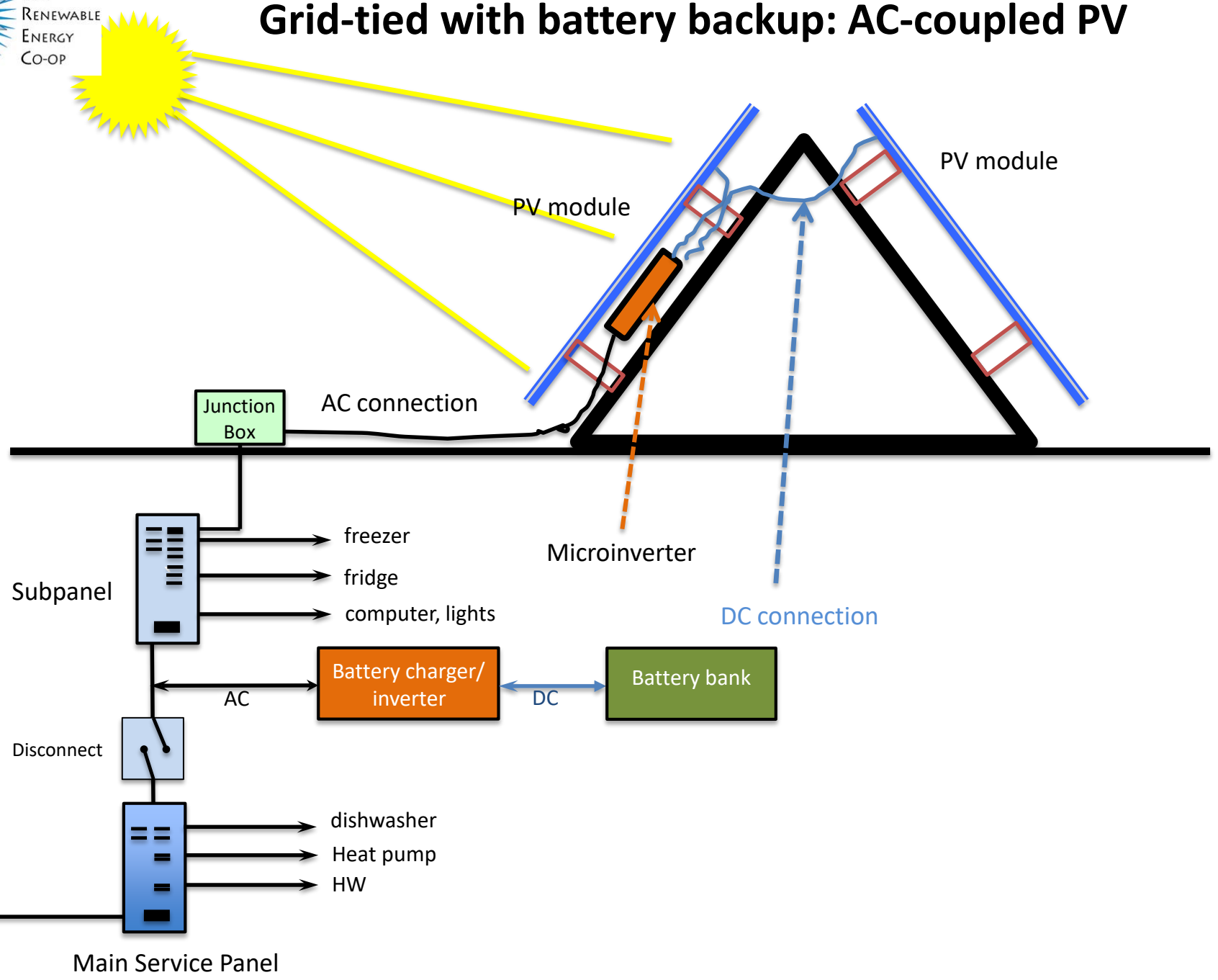


Power output of a Galiano solar array on 21 Aug, 2017; partial solar eclipse at 10:30 am



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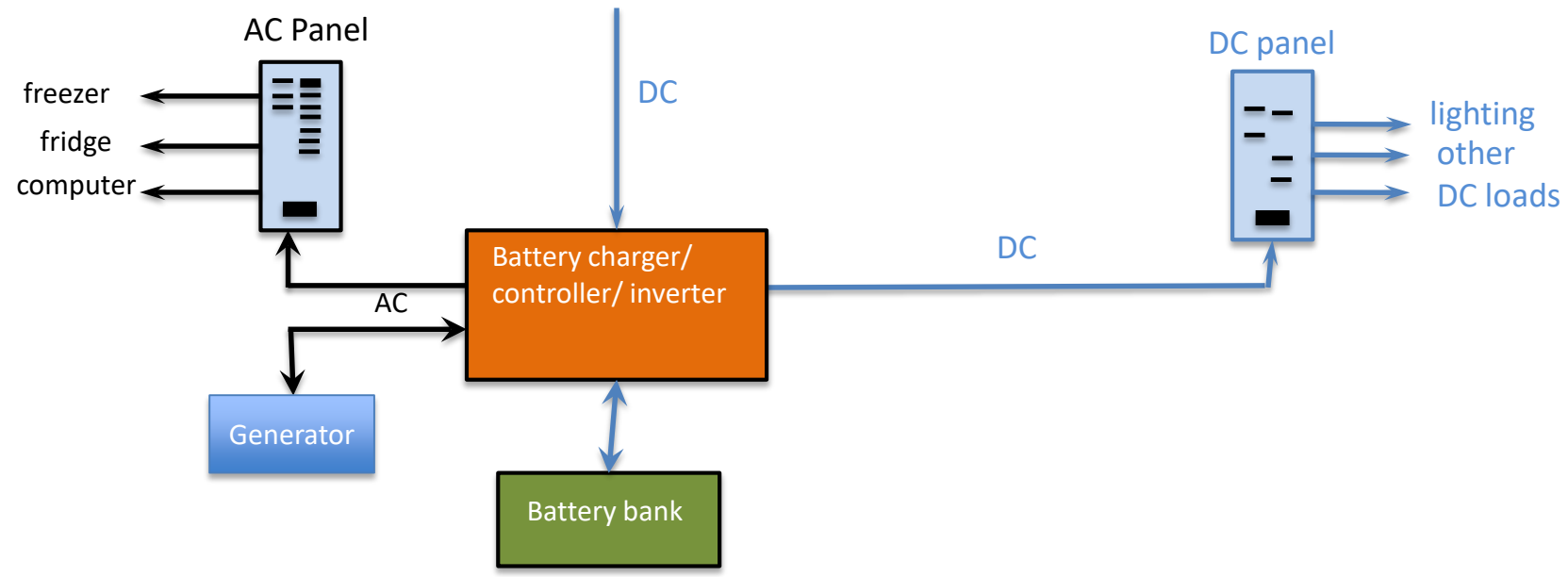
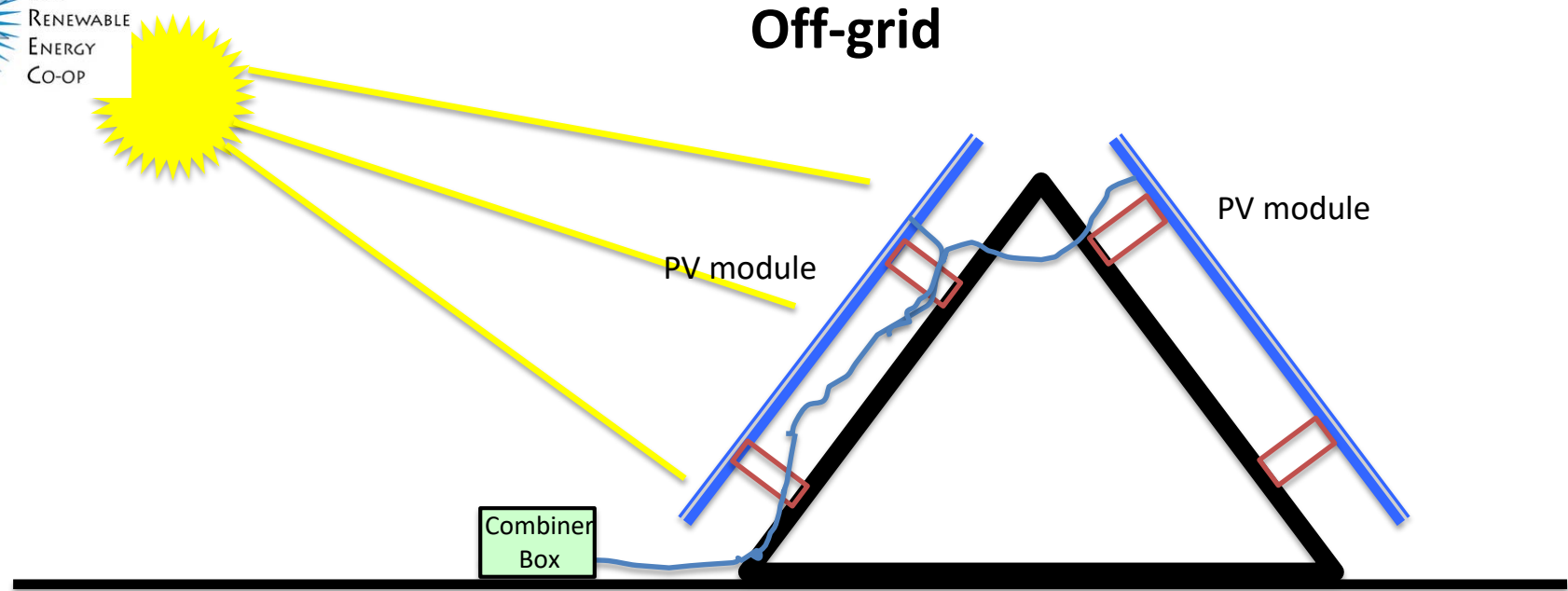
Grid-tied with battery backup: AC-coupled PV





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Off-grid





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Off-grid with battery storage & generator backup

