

BOARD OF SUPERVISORS MEETING
March 26, 2019

"For all items *NOT* on the agenda"

(Each Speaker Limited to 3 Minutes)

Voluntary Sign-In Sheet

1. Milo Mateer ✓
2. Isaac West ✓
3. Thalia ✓
4. Maxx Steinbach
5. Scott Malkus
6. Norm Ehrlich
- 7.
- 8.
- 9.
- 10.
- 11.
- 12.
- 13.
- 14.
- 15.
- 16.



Six Rivers Solar
818 Broadway • Eureka, Ca. 95501
(707) 443-5652 • www.SixRiversSolar.com

SOLAR COMPLIANCE REPORT

PROPERTY APN:

SUMMARY OF DESIGN

ANNUAL DEMAND SUMMARY: 5,311Kwh (Attachments A.1 & A.2)

SYSTEM SIZE: (5311Kwh X .80) = 4249Kwh (B)

SOLAR ARRAY: 16 320watt Solar Panels

CHARGE CONTROLLERS: 2 Schnieder 60-150's

INVERTERS: 2 XW 5548's

BATTERIES: 16 US L16HC XC2

MOUNTING: SNAP-N-RACK ROOF MOUNT/APA GROUND RACKING

SOLAR SIZING CALCULATIONS

MONTHS COVERED

J F M A M J J A S O N D

[illegible]

$$10\text{mo/yr} \times 4.3\text{ wk/mo} \times 18.942\text{ kwh/wk} = 815\text{ kwh/yr}$$

SOLAR SIZING CALCULATIONS

MONTHS COVERED

J F M A M J J A S O N D

[illegible]

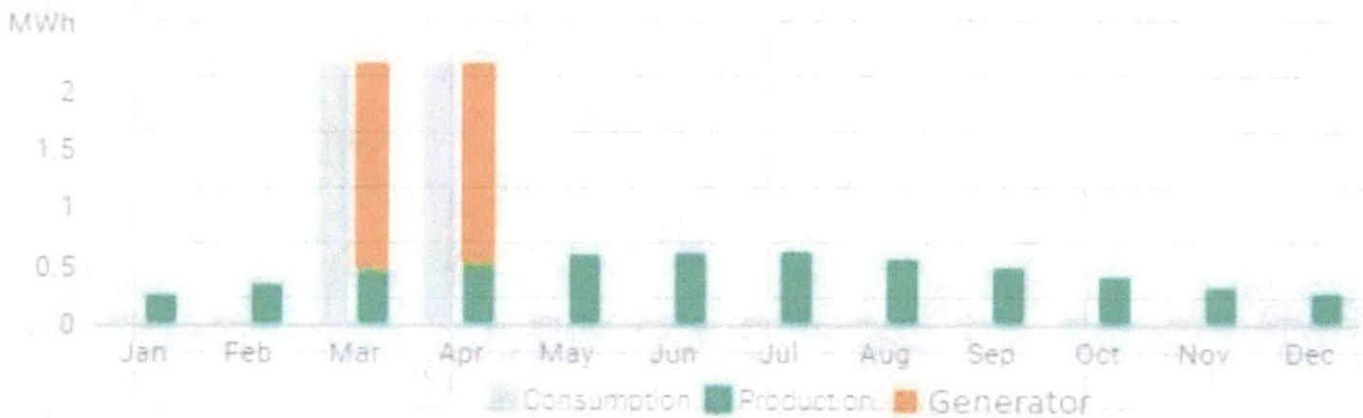
$$2\text{mo/yr} \times 4.3 \text{ wk/mo} \times 522.942 \text{ kwh/wk} = 4,496 \text{ kwh/yr}$$

PVWATTS Data

Month	AC System Output(kWh)	Solar Radiation Plane of Array Irradiance	DC array Output (kWh)
1	346	2.67	83
2	390	3.33	93
3	546	4.22	130
4	659	5.3	159
5	727	5.79	179
6	724	6.08	182
7	734	6.003	186
8	667	5.41	167
9	608	5.13	154
10	536	4.36	135
11	352	2.82	84
12	328	2.53	78
Total	6623	53.69	1635

Our **Annual Demand Summary:** 5,311Kwh in order to be 80/20 Compliant we must supply a minimum array size of 4.2Kw. But we must account for system losses so a safe array size of 5Kw will be suitable for this application. This design will also give us some wiggle room for any unaccounted loads.

Monthly chart showing Solar Production VS Generator Usage



In order to be 80/20 compliant, we will need an Array Size of 16 Panels, a Generator needed for the seasonal loads.

EQUIPMENT DESIGN CONSIDERATIONS

Inverter Sizing and surge requirement

Due to the nature of the HID lights they will require a Surge in order to start. The inverters will have to be able to handle the 20, 600watt lights which is 12000watts plus the baseload, but the surge of the lights is 3 times the name plate rating (36000watts). Therefore, we will have two XW 5548's in order to split the loads evenly and the generator to pick up the slack.

Charge controllers

This system will need two charge controllers. The controllers will each have 8 solar panels and will also be charging a battery bank.

Energy storage, you can go with Flooded Lead Acid batteries or Lithium Ion Batteries. The former has pros of being cheap but come with the cons of heavy maintenance and weight. They also don't have the longest life span 5-8 years if you treat them well.

The Latter, Lithium Ion batteries are lightweight, long lasting (15-22 years) and are maintenance free! The only major cons with them are the big price point up front, but if you compare the two batteries cycle life's they are well worth the money.

This system will be designed with two Days of Autonomy (How many days of storage) and with Lead Acid Batteries. This will power any critical loads that you need kept on when there is no sun. We can always increase the days of Autonomy if needed, but due to the small baseloads two days should be a great fit.

Location of equipment

You have two options with the array. You can go for a roof mounted system for the 16 panels. But this is space dependent. We can always go with a ground mounted system if roof mounting unachievable.

Considering the Charge controllers, Batteries and inverter we will want these in close together, in a dedicated (no clutter) dry and temperature safe room.

Solar Panel Modules

Module Type	JKM320PP-72	
	STC	NOCT
Maximum Power (P _{max})	320Wp	237Wp
Maximum Power Voltage (V _{mp})	37.4V	34.7V
Maximum Power Current (I _{mp})	8.56A	6.83A
Open-circuit Voltage (V _{oc})	46.4V	43.0V
Short-circuit Current (I _{sc})	9.05A	7.35A
Module Efficiency STC (%)	16.49%	

Charge Controllers

Device short name	Conext™ MPPT 60 150
Electrical specifications	
Nominal battery voltage	12, 24, 36, 48, 60 V
Battery voltage operating range	0 Vdc to 80 Vdc
PV array operating voltage	140 V
Max. PV array open circuit voltage	180 V including temperature correction factor
Max. array short-circuit current	60 A (48 A @ STC)
Max. charge current	60 A (for all battery voltages except 60 V)
Max. and min. wire size in conduit	#6 AWG to #14 AWG (10 to 2.5 mm ²)
Max. output power	5500 W
Charger regulation methods	Three stage (bulk, absorption, float) plus manual equalization Two stage (bulk, absorption) plus manual equalization
Supported battery types	Flooded, GEL, AGM, Custom

Device short name

Inverter AC output (standalone)

Output power (continuous) at 25°C

Overload 30 min/60 sec at 25°C

Output power (continuous) at 40°C

Maximum output current 60 seconds (rms)

Output frequency (selectable)

Output voltage

Total harmonic distortion at rated power

Idle consumption search mode

Input DC voltage range

Maximum input DC current

Charger DC output

Maximum output charge current

Output charge voltage range

Charge control

Charge temperature compensation

Power factor corrected charging

Compatible battery types

Battery bank range (scaled to PV array size)

AC input

AC 1 (grid) input current (selectable limit)

AC 2 (generator) input current (selectable limit)

Automatic transfer relay rating/typical transfer time

AC input voltage limits (bypass/charge mode)

AC input frequency range (bypass/charge mode)

XW+ 5548 NA

5500 W

7000 W/9500 W

4500 W

82 A (120 V); 41 A (240 V)

50/60 Hz

L-N: 120 V +/- 3%; L-L: 240 V +/- 3%

< 5 %

< 8 W

42 to 60 V (48 V nominal)

150 A

110 A

40 – 64 V (48 V nominal)

Three stage, two stage, boost, custom

Battery temperature sensor included

0.98

Flooded (default), Gel, AGM, Lithium ion, custom*

440 – 10000 Ah

3 – 60 A (60 A default)

3 – 60 A (60 A default)

60 A/8 ms

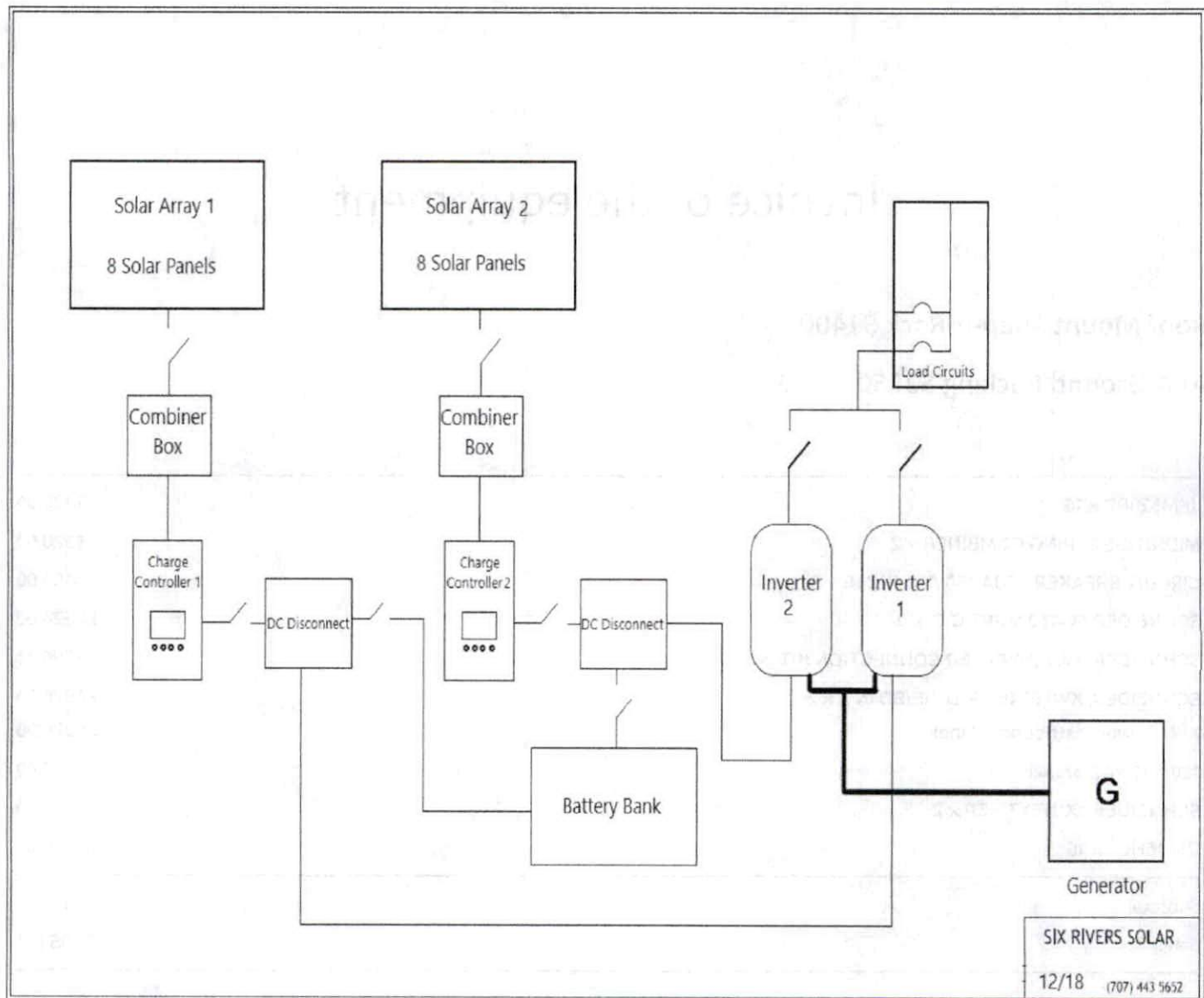
L-N: 78 - 140 V (120 V nominal);

L-L: 160 - 270 V (240 V nominal)

55 – 65 Hz (default) 52 – 68 Hz (allowable)

US L16E XC2, US L-16 XC2, US L-16HC XC2 - SPECIFICATIONS

BCI Group Size	Model	1-hr Rate	2-hr Rate	5-hr Rate	6-hr Rate	10-hr Rate	20-hr Rate	48-hr Rate	72-hr Rate	100-hr Rate	Voltage	Standard Terminal Type	AMP HOURS @ 25 HR. RATE	MINUTES @ 75 AMPS	MINUTES @ 56 AMPS	MINUTES @ 25 AMPS	Length	Width	Height	wt Weight Lbs (kg)
903	US L16E XC2	193	223	270	281	312	360	381	391	400	6	Large "L"	360	198	287	795	11-7/8	7-1/8	16-3/4	104 (47)
903	US L16 XC2	220	251	297	307	337	385	408	419	428	6	Large "L"	385	225	322	865	(302)	(181)	(425)	110 (50)
903	US L16HC XC2	239	272	323	335	368	420	445	457	467	6	Large "L"	420	250	358	965				118 (54)



Notice

WIRE/RACKING STILL TO BE DETERMINED.

THIS DOES NOT INCLUDE ANY PERMITTING OR INSTALLTION PRICE.

THIS REPORT ALSO DOES NOT INCLUDE ANY UNFORSEEN ENGINEERING CIRCUMSTANCES. *

ALL PARTS/EQUIPMENT ARE F.O.B. Eureka

Invoice of the equipment

Roof Mount Snap-n-Rack \$1400

APA Ground Racking \$2550

JKM320PP x 16	\$5,120.00
MIDNITE-6 STRING COMBINER x 2	\$320.00
CIRCUIT BREAKER - 30A 150VDC 1POLE x 8	\$160.00
SCHNEIDER 60-150 MPPT C.C. x 2	\$1,324.00
SCHNEIDER-XW+ INVERTER CONNECTION KIT	\$896.74
SCHNEIDER, XW+5548 GRID TIE/BB INV. x 2	\$7,970.00
XW+ Power Distribution Panel	\$1,270.00
120/240 VAC breaker kit	\$190.00
SCHNEIDER-CONEXT SCP x 2	\$600.00
USL16HCL x 16	\$6,320.00
<hr/>	
Subtotal	\$24,170.74
Sales Tax	\$2,054.51
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Total	\$26,225.25

PACE

Property Assessed Clean Energy

WHAT IS PACE?

Property Assessed Clean Energy (PACE) is a financing mechanism that enables low-cost, long-term funding for energy efficiency, renewable energy and water conservation projects. PACE financing is repaid as an assessment on the property's regular tax bill, and is processed the same way as other local public benefit assessments (sidewalks, sewers) have been for decades. Depending on local legislation, PACE can be used for commercial, nonprofit and residential properties.

HOW DOES IT WORK?

PACE is a national initiative, but programs are established locally and tailored to meet regional market needs. State legislation is passed that authorizes municipalities to establish PACE programs, and local governments have developed a variety of program models that have been successfully implemented. Regardless of model, there are several keystones that hold true for every PACE program.

- PACE is voluntary for all parties involved.
- PACE can cover 100% of a project's hard and soft costs.
- Long financing terms up to 20 years.
- Can be combined with utility, local and federal incentive programs.
- Energy projects are permanently affixed to a property.
- The PACE assessment is filed with the local municipality as a lien on the property.

WHY IS IT SO POPULAR?

Property owners love PACE because they can fund projects with no out-of-pocket costs. Since PACE financing terms extend to 20 years, it's possible to undertake deep, comprehensive retrofits that have meaningful energy savings and a significant impact on the bottom line. The annual energy savings for a PACE project usually exceeds the annual assessment payment, so property owners are cash flow positive immediately. That means there are increased dollars that can be spent on other capital projects, budgetary expenses, or business expansion.

Local governments love PACE because it's an Economic Development Initiative that lowers the cost of doing business in their community. It encourages new business owners to invest in the area, and creates jobs using the local workforce. PACE projects also have a positive impact of air quality, creating healthier, more livable neighborhoods.

HOW CAN I GET PACE?

www.PACENation.us has all the tools and resources you need to get started with PACE. Check to see if your state has passed a PACE statute, and if your area has an active program. If not, contact us to find out if there is a local initiative in development and we may be able to put you in touch with a working coalition. We look forward to hearing from you!

BENEFITS OF PACE

WORKFORCE DEVELOPMENT:
Creates local jobs

ECONOMIC DEVELOPMENT:
Lowers cost of doing business

BUILDING STOCK:
Maintained and upgraded

BOTTOM LINE:
Directly impacts local businesses

HEALTHY AIR:
Environmental impact

PACENation
Building the clean energy economy

PACENation is the national, nonprofit advocate for PACE financing. We provide leadership, data, support and resources for the growing marketplace.

www.pacenation.us
info@pacenow.org

ENERGY COMPLIANCE WORKBOOK

HUMBOLDT COUNTY
ORDINANCE # 2599

§55.4.6.3.1
§55.4.12.5

WRITTEN BY: NORM EHRLICH
ENGINEER/ATTORNEY/CONTRACTOR
AND OWNER AND OPERATOR OF SIX RIVERS SOLAR, LLC
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INTRODUCTION

§55.4.12.5 PERFORMANCE STANDARDS FOR ENERGY USE

All electricity sources utilized by Commercial Cannabis Cultivation, Manufacturing, or Processing activities shall conform to one or more of the following standards:

§55.4.12.5.1 grid power supplied from 100% renewable resource

§55.4.12.5.2 on-site renewable energy system with twenty percent net non-renewable energy use

§ 55.4.12.5.3 grid power supplied by partial or wholly non-renewable source with purchase of carbon offset credits

COMMENT ON THE LAW

This opinion is based on the plain meaning of the written code, discussions with the County compliance staff and my personal experience writing regulations for a Federal Agency in Washington D.C.

There are no other regulations defining the following issues:

1. How the inspectors will enforce compliance with the on-site 80/20 rule of 55.4.12.5.2, since no requirements are stated as to the methodology of data collection or the or record keeping are required to show compliance. When I asked compliance staff about this they only said the inspectors will use their judgment. This law (regulation) would not pass the vagueness test of the 5th Amendment of due process and a citation should be unenforceable.
2. The other two grid tied systems are much more likely to be enforceable because of paperwork trails.
3. The 80/20 rule can be reasonably interpreted to apply to an annual energy load

My conclusion based on my 39 years of experience dealing with the Building Department is that if you have no solar on site you will have a tough time arguing that you could under any circumstances comply with the code.

My discussions with growers is that they may need large amounts of energy for only a part of the year and use during the remaining months. What this means that to minimize the size and initial cost of the system required to comply with the regulation, usage should be calculated for each of the twelve months and not just the peak usage and summed for the prospective annual usage and then use the DOE PV watts calculator to show that the annual performance meets the 80/20 rule. What this means is that you can use your generators exceeding 20% during the shorter period of intensive use. The following worksheet allows you to present documentation to the inspector that he must accept.

COMMENT ON THE TYPES OF SOLAR SYSTEMS TO CHOSE FROM

RESIDENTIAL - Usually 5kw or under. This is a typical system for the average family living "on-grid" . Most "off grid" use less energy and therefore need smaller systems. Generators are always used to charge batteries if needed due to seasonal and weather variances.

These systems are have evolved to be plug and play split phase 240/120 with inputs from solar and a small generator to back up the solar. All components should be designed to work as a system and not as parts from different manufacturers. We prefer the Schneider Conext SW inverters, controllers etc. Shading is a major consideration if the house is in the shade. We have pre-engineered ground racking that can be used for mounting panels hundreds of feet from the house.

Having sold thousands of lead acid L16 batteries for 39 years I welcome the new lithium ion battery technology. However it comes at a stiff price initially. However if you are discharging below 50% or not properly maintaining the batteries by equalizing to prevent sulfation and corrosion you will probably get no more than 5 years. Lithium Ion batteries could last up to 20 years without any maintenance or risk of improper usage and are therefore a better choice even at the higher price. If you can afford to buy an entirely a new system (you may be able to use your existing "newer" panels) to reduce cost.

We can arrange for the County PACE loan program to finance a new system on your home if you have equity in the property. No other credit requirements. Your payments will be less than the gas you are using for your generator now. And now that you have joined the "tax payer club" you can take a 30% reimbursement from Uncle Sam on the cost of the system.

"off grid" Humboldt County has been my business for 39 years. I have installed solar in its primitive forms in the 1970's till now and in the long run if you plan to live a modern lifestyle and you can use the financing and 30% Federal Tax Credit it is smarter to go new than to patch up old equipment.

COMMERCIAL CANNABIS OFF GRID ENERGY

RULE #1 - if you are paying PG&E to bring a power line to your property you are "nuts"

RULE #2 - if you are using common single phase inverters for systems over 15KW again you are "nuts"

RULE #3 - if you chose to cheat by using your generator for most of your energy, transport and store fuel, putting up with the noise and maintenance instead of producing power with solar at ¼ the cost of operating your facility you are "way nuts".

RULE #4 - see rule #3 and get solar

SOLAR PANELS AND MOUNTING

At the present time solar panels are the cleanest and cheapest way to create electricity. This product will eventually save humanity from extinction and will be the only way you can afford to compete in business. Little do you know you are lucky to be forced to make the best and right choice between a generator and solar. Those who resist and delay will quickly find themselves on the "ash heap of history"

We have unique "screw into the ground" columns that avoid having to nasty and expensive concrete in big holes in the ground. Reduce labor costs and wasted time and money.

Typically you will be mounting 100 -500 solar panels on a flat sunny location somewhere on your property. Site location should be free from shading year round and tilted according to the yearly pattern of energy consumption. This can be determined from the monthly usage predictions determined by the tables created by you in the workbook. The power lines from the panels to the inverter can run long distances because the system can take in up to 1000 VDC from the panels which means power can be transmitted very long distances with little line loss.

MICROGRID INVERTER WITH LITHIUM ION BATTERY BANK

Here is where we separate the men from the boys. This stuff is brand spankin' new technology being adopted in third world applications replacing the need for centralized energy infrastructure. These micro grid systems are about to change the world. To our knowledge we are the only local company having installed 3 phase micro grids with lithium batteries. (see rule #2). The equipment cannot be sourced from suppliers in the US. We have worked with the Chinese engineer of the manufacturer of this one of a kind hybrid inverter that can bring in large solar arrays at high voltages and produce 480 volt AC in ranges of 50kw up to 500 kw. After working with many prospective growers on their energy plans I have determined that most everyone should use the 50kw sized inverter and 126KwH of Li-ion storage. Even if you start out smaller than 50kw in solar panels and less batteries if you expand your requirements over time a second 50kw inverter should be used rather than a single larger inverter unless you definitely need the larger inverter from the start.

SECURITY WITH HUGHES GEN 5 SATELLITE INTERNET

The last piece of the puzzle is our inexpensive stand alone wireless security/internet product for both residential and commercial users.

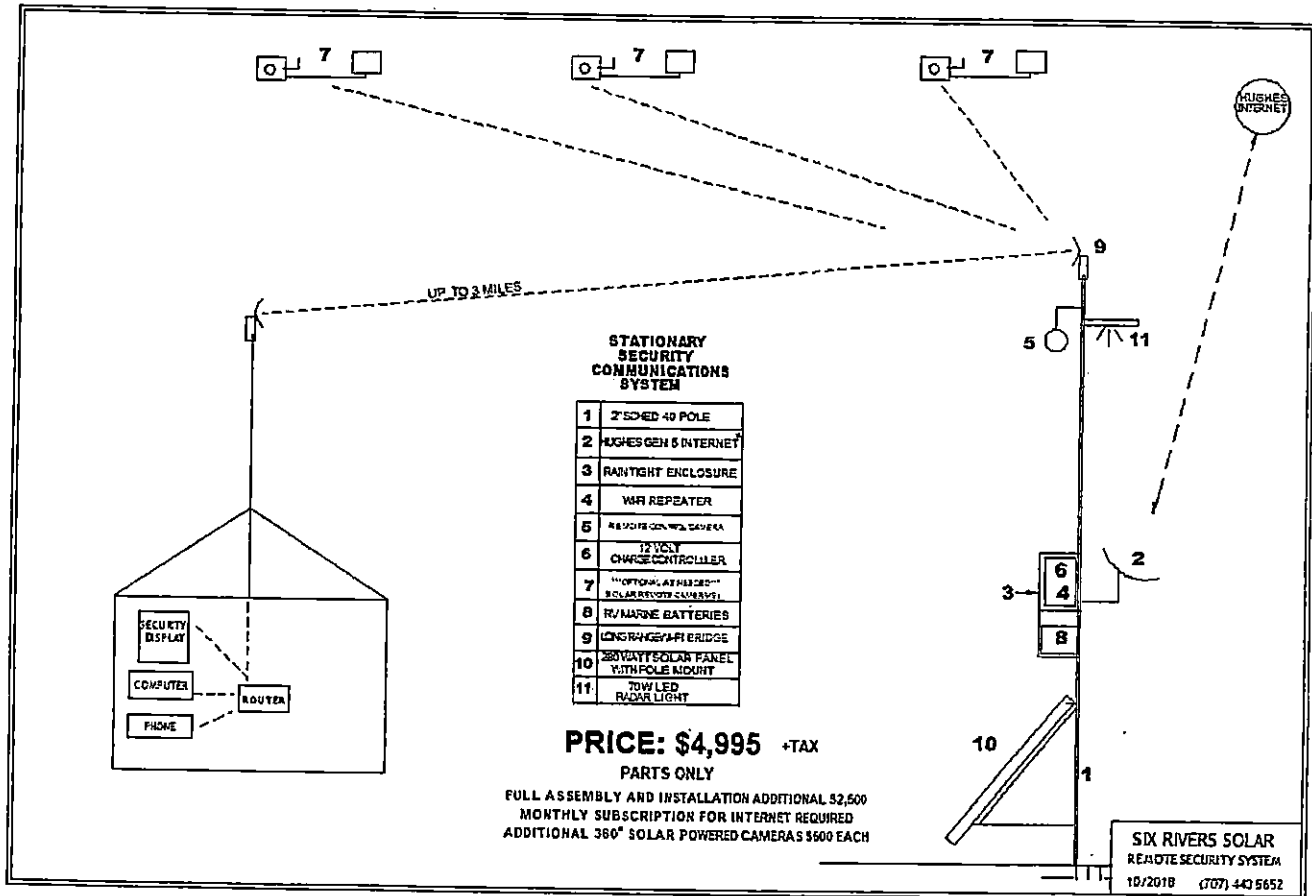
We selected this self contained satellite based system for the following reasons:

There are two ways to get on the internet ground based 4G cell tower signals or satellite. We believe that the Hughes Gen 5 has come to be fully matured and more reliable than cell towers with the frequent fires and power interruptions. If you prefer we can use the Verizon JetPac that we use on our mobile trailers.

This stationary equipment sets on a 20' steel pole anywhere on the property with a satellite dish, cameras and repeaters powered by a dedicated solar panel to relay the wi fi signal up to 3 miles away to your house or office. We can place as many as 10 other remote cameras powered by solar panels anywhere on the property to feed into the stationary

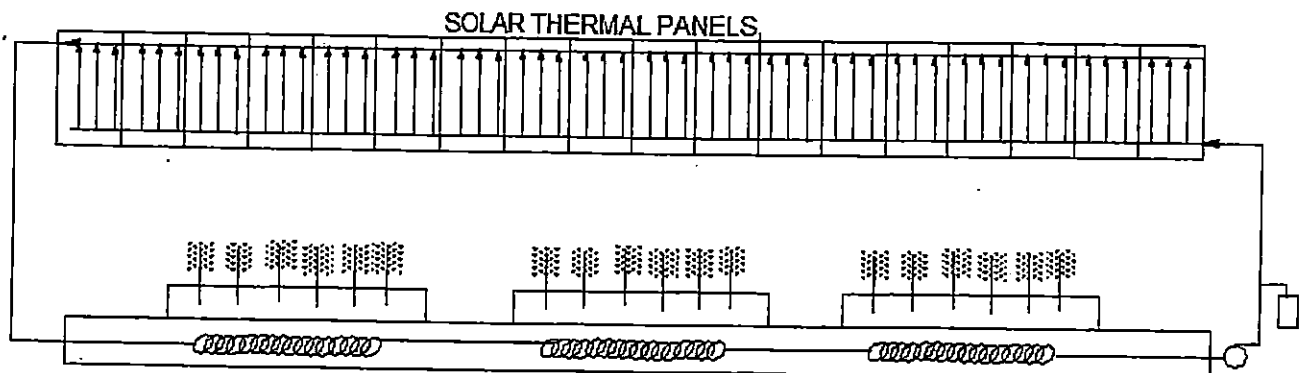
component and relay to the home as much as 3 miles away.

For example say you have a residence in the shade. We can set the satellite tower (pole) say 400' away in a clearing and aim the satellite dish to the satellite. The internet wi-fi is then created from the satellite (or JetPac) and broadcasted over along range repeater to your residence. Other security cameras can be located remotely on the property and picked up by the wi-fi and transmitted with the repeater to the house. Of course the camera pictures can be broadcast over the internet to get on the web and viewed from anywhere in the world. All of this equipment can be purchased for under \$5,000. Installation is \$2,500. View the diagram on the following page.



SOLAR THERMAL HEATING OF FLOWER BEDS

Six Rivers Solar has many years of solar thermal experience. We can use this experience to heat your flower beds by circulating solar heated water through poly pipe buried in the soil under your plants. We use the best Israeli made "low temp" glazed panels typically used for heating swimming pools.



ENERGY WORKSHEET

ENERGY PRODUCED BY SOLAR

I have analyzed PV watts data from several of the inland micro climates in Humboldt County and the solar insolation data is almost identical for a due south (180 degrees) azimuth with a 30 degree array tilt. HERE IT IS: FOR EACH 1KW OF SOLAR PANELS YOU WILL PRODUCE ANNUALLY 1,500 KILLOWATT HOURS OF AC ELECTRICITY.

On the bottom of this page there is an energy worksheet to predict your loads. For residential applications and you are not using some form of air conditioning or encountering some other seasonal variations there is no need to use a monthly breakdown of energy use to calculate the optimum system size. Sum up the annual loads for the year (KwH) and take 80% of that number. This is your system size requirements. Divide that number by 1,500 and that is the size in Kw of solar panels required to meet the code requirements and is the appropriate sized system for your needs. For seasonal variations in energy usage you must do a monthly chart and sum the annual use. Follow the same procedure as above.

SELECTING THE PROPER SIZED SOLAR SYSTEM

Step 1 - fill out the solar sizing calculation worksheet by referencing the consumption table provided. If seasonal variations are significant than do one sheet for the individual months.

Step 2 - add up kilowatt-hour usage for all 12 months

Step 3 - divide this number by 1,500 to get the kw size of the system you need for 100% solar.

Step 4 - multiply by 0.8 to get the proper kw of solar panels necessary to comply with building department requirements

* if you are using grow lights, pumps and motors you will read the wattage off of the plate of the unit as they will not appear on the chart

CHOOSING TO USE LITHIUM ION BATTERIES?

Bottom line is YES. They are approximately 3x the cost of a lead acid battery. Prices are not likely to drop soon. They will last unto 5 times longer without maintenance. If you are receiving the 30% tax credit for your system and you meticulously maintain your lead acid batteries than the answer is definitely YES. Batteries are warranted for 10 years and would expect to last twice as long as the warranty. They are less hazardous, light weight, and are virtually not a concern as with lead acid batteries.

Location Data.

SOLAR SIZING CALCULATIONS

MONTHS COVERED (CIRCLE)

J F M A M J J A S O N D

DESCRIPTION	WATTAGE	HOURS/WK	WHRs/WK

Watt-hrs /wk

kWh

divide by 1,000 x 4.3 wk/mo x #mo =

Appliance Consumption Table

Appliance	Watts	Appliance	Watts	Appliance	Watts
Kitchen		Living Room		Tools	
Blender	500	Blu ray Player	15	Band Saw - 14"	1100
Can Opener	150	Cable Box	35	Belt Sander - 3"	1000
Coffee Machine	1000	DVD Player	15	Chain Saw - 12"	1100
Dishwasher	1200-1500	TV - LCD	150	Circular Saw - 7-1/4"	900
Espresso Machine	800	TV - Plasma	200	Circular Saw 8-1/4"	1400
Freezer - Upright - 15 cu. ft.	1240 Wh/D ay**	Satellite Dish	25	Disc Sander - 9"	1200
Freezer - Chest - 15 cu. ft.	1080 Wh/D ay**	Stereo Receiver	450	Drill - 1/4"	250
Fridge - 20 cu. ft. (AC)	1411 Wh/day**	Video Game Console	150	Drill - 1/2"	750
Fridge -16 cu. ft. (AC)	1200 Wh/day**	Lights		Drill - 1"	1000
Garbage Disposal	450	CFL Bulb - 40 Watt Equivalent	11	Hedge Trimmer	450
Kettle - Electric	1200	CFL Bulb - 60 Watt Equivalent	18	Weed Eater	500
Microwave	1000	CFL Bulb - 75 Watt Equivalent	20	Misc.	
Oven - Electric	1200	CFL Bulb - 100 Watt Equivalent	30	Clock Radio	7
Toaster	850	Compact Fluorescent 20 Watt	22	Curling Iron	150
Toaster Oven	1200	Compact Fluorescent 25 Watt	28	Dehumidifier	280
Stand Mixer	300	Halogen - 40 Watt	40	Electric Shaver	15
Heating/Cooling		Incandescent 50 Watt	50	Electric Blanket	200
Box Fan	200	Incandescent 100 Watt	100	Hair Dryer	1500
Ceiling Fan	120	LED Bulb - 40 Watt Equivalent	10	Humidifier	200
Central Air Conditioner	3800	LED Bulb - 60 Watt	13	Radiotelephone -	5

- 24,000 BTU NA		Equivalent		Receive	
Central Air Conditioner	3250	LED Bulb - 75 watt	18	Radiotelephone -	75
- 10,000 BTU NA		equivalent		Transmit	
Furnace Fan Blower	800	LED Bulb - 100 Watt	23	Sewing Machine	100
		Equivalent			
Space Heater NA	1500	Office		Vacuum	1000
Tankless Water Heater -	18000	Desktop Computer	200	Note: TVs, Computers, and other devices left plugged in but not turned on still draw power.	
Electric		(Standard)			
Water Heater - Electric	4500	Desktop Computer	500	**To estimate the number of hours that a refrigerator actually operates at its maximum wattage, divide the total time the refrigerator is plugged in by three. Refrigerators, although turned "on" all the time, actually cycle on and off as needed to maintain interior temperatures.	
		(Gaming)			
Window Air		Laptop	100		
Conditioner 10,000	900				
BTU NA					
Window Air		LCD Monitor	100		
Conditioner 12,000	3250				
BTU NA					
Well Pump - 1/3 1HP	750	Modem	7		
Laundry		Paper Shredder	150		
Clothes Dryer - Electric	3000	Printer	100		
Clothes Dryer - Gas	1800	Router	7		
Clothes Washer	800	Smart Phone - Recharge	6		
Iron	1200	Tablet - Recharge	8		

* The daily energy values listed here are for the most efficient units in their class and the information was obtained from Consumer

LAST COMMENT

If you are choosing to use a large micro grid system and you are willing to analyze your usage month by month, we can run a more accurate analysis by matching the monthly solar production at your particular location related to monthly energy usage. This would provide any documentation you would to pass the energy inspection part of compliance. There are no monitoring or record keeping requirements for the 80/20 rule.

If you decide to use a solar thermal heating system for heating the plant beds we can convert the thermal energy into kWh adding more solar to the 80/20 equation.



GENERATORS???

WE DON'T NEED NO STINKIN'
GENERATORS

PROPOSED POLICY FOR IMPLEMENTING MUNICIPAL CODE 33-55.4.12.5.2

"ALL ELECTRICITY SOURCES UTILIZED BY COMMERCIAL CANNABIS CULTIVATION, MANUFACTURING, OR PROCESSING ACTIVITIES SHALL CONFORM TO THE FOLLOWING
... *ON-SITE RENEWABLE ENERGY SYSTEM WITH TWENTY PERCENT NET NON RENEWABLE ENERGY USE.*

POLICY ELEMENT #1 - SEND OFFICIAL NOTIFICATIONS TO ALL PERMITTED CANNABIS OPERATORS STATING THAT THIS LAW IS PART OF THE VERSION 2.0 OF THEIR LEGAL REQUIREMENTS THAT WAS NOT IN VERSION 1.0 EXPLAINING THAT THEY ARE REQUIRED TO

1. SUBMIT AN ENERGY BUDGET DETAILING ALL MONTHLY CULTIVATION-RELATED ENERGY USE AS WELL AS
2. ON-SITE RENEWABLE ENERGY GENERATION AND STORAGE CAPACITY

POLICY ELEMENT #2 - SEND WITH THE NOTIFICATION, A WORKBOOK (SEE EXAMPLE PROVIDED)

1. DETAILING AND EXPLAINING THE METHOD TO BE USED IN DETERMINING THEIR ENERGY BUDGETS AND
2. EXAMPLE OF A PROPERLY FILLED OUT ENERGY BUDGET FORM.

POLICY ELEMENT #3 - REQUIRE A PERMIT APPLICATION BE SUBMITTED NO LESS THAN 90 DAYS FROM WHEN THEIR VALID STATE PERMITS ARE ISSUED. THE PERMIT SHOULD REQUIRE

1. A PLOT PLAN SHOWING LOCATIONS OF SOLAR ACCESS AND PLACEMENT OF EQUIPMENT IDENTIFIED IN THE ENERGY BUDGET AND SHOW THE MEANS TO POWER EACH LOCATION

POLICY ELEMENT #3 - MEANS FOR VERIFICATION

1. REQUIRE SIMPLE KILLOWATT METERS (OR OTHER MONITORING) ON BOTH GENERATORS AND INVERTER TO BE READ BY INSPECTORS

POLICY ELEMENT #4 - SPECIAL CIRCUMSTANCES CONSIDERATIONS

1. ALLOW FOR HARDSHIP OR FEASIBILITY ISSUES FOR DELAYS IN EXECUTING THEIR ENERGY PLAN
2. STATE FINANCIAL HARDSHIPS THAT WILL DELAY THE IMPLEMENTATION OF THEIR RENEWABLE ENERGY PROJECT AND PROVIDE REASONABLE EXTENSIONS IF JUSTIFIED

POLICY ELEMENT #5 - ISSUE WARNING TO NON COMPLIANT PERMIT HOLDERS

1. IF THE RECORD INDICATES THAT NO PERMIT HAS BEEN SUBMITTED WITHIN THE STATED TIMELINE AN OFFICIAL WARNING BE ISSUED TO THE PERMIT HOLDER AND GIVEN A GRACE PERIOD OF AN ADDITIONAL 60 DAYS TO SUBMIT THE WORKSHEET AND PERMIT APPLICATION.
2. THE FINAL DATE WHICH THE COUNTY WILL REPORT THE "NON COMPLIANCE OF THE LOCAL ORDINANCE" UNDER §26055 OF THE BUSINESS AND PROFESSIONAL CODE

COMMENTS ON ENFORCEMENT

1. THE STATE LAW §26050 OF THE BUSINESS AND PROFESSIONAL CODE INTO 20 CLASSIFICATIONS. (SEE ATTACHED). THE COUNTY SHOULD PRIORTIZE IT'S RESOURCES BY FOCUSING ON THE LARGEST POTENTIAL GHG EMITTERS
2. COUNTY MUST INCLUDE THE "OFF-GRID GHG EMISSIONS IN IT'S MANDATORY REPORTING TO THE STATE AND TRACK THE REDUCTIONS THROUGH COMPLIANCE EFFORTS. THIS CAN BE DONE BY TABULATING THE WORKSHEETS SUBMITTED WITH PERMITS.
3. THE COUNTY SHOULD DETERMINE THE POTENTIAL FINANCIAL BENEFITS FROM THE SUBMITTALS AND PROVIDE THE MEANS TO TRAIN AND EMPLOY NEW TALENT TO EXPAND THE LOCAL SOLAR WORKFORCE FOR THE FUTURE CHANGES IN THE ENERGY FIELD.
4. TRAINING "OFF-GRID" SOLAR INSTALLATIONS REQUIRES SPECIAL KNOWLEDGE USING NEW BATTERY STORAGE TECHNOLOGY. WITHIN THE NEXT FIVE YEARS ALL "ON-GRID" SYSTEMS WILL USE THIS TECHNOLOGY. THIS "OFF GRID" TRAINING AND EDUCATION WILL GIVE US A HEAD START IN A FUTURE "MICROGRID" BASED UTILITY SYSTEM EVOLVING TO REPLACE THE LARGE CENTRALIZED UTILITY GRID.
5. ONE VERY LARGE AND IMPORTANT COMPONENT OF MAKING THISPOLICY WORK IS THE ACCESS TO CAPITAL TO INVEST IN THE "CLEAN ENERGY" REPLACEMENT OF GASOLINE GENERATORS. A CONSERVATIVE ESTIMATE WOULD BE AT LEAST 10MW OF "OFF-GRID" SOLAR INSTALLATIONS. THIS REPRESENTS (AT THE AVERAGE INSTALLED PRICE OF \$5.00/WATT) \$50 MILLION DOLLARS OF SOLAR BUSINESS.
6. PROPERTY ASSESSED CLEAN ENERGY (PACE) LOANS IS KEY THE TO SUCCESS. ALMOST NO ONE KNOWS ABOUT PACE LOANS FOR FINANCING SOLAR INSTALLATIONS. ALTHOUGH THIS NEW INDUSTRY UNLIKE ANY OTHER HAS ALMOST NO ACCESS TO CONVENTIONAL CAPITAL MARKETS. ONE EXCEPTION IS PACE WHICH ONLY LOOKS TO THE EQUITY IN THE PROPERTY. MOST OF THE PAST ILLEGAL GROWING OPERATATORS HAVE THEIR ASSET(S) LOCKED UP IN THEIR PROPERTY. PACE LOANS COULD BE THE WAY THEY CAN MAKE THE INVESTMENT IN CLEAN ENERGY WITH LOCKED UP EQUITY.