

Energy Generation and Consumption Plan

Teodora Petrova, LLC PLN 11949-CUP

October 20th, 2021

The applicant, Teodora Petrova cultivates cannabis in greenhouses, using mixed light cultivation techniques. Greenhouse lighting, water and air pumps, atomizer (for foliage feeding and pest/disease), fans, power tools, surge protectors, dehumidifiers, cannabis trimming machine and all electrical supplies and equipment are run from two diesel generators at this time. Only one generator in operation at any time. Each generator has a different load capacity and is used only as necessary. There is an additional 75kilowatt generator on site for emergency back-up purposes. Generator is always monitored by someone at site while in operation.

Energy conservative method are employed throughout the property. Domestic generator purposes limited to actual use time and generators are never left running without power loads. Domestic generator use is year-round, from the residence daily in the morning and at night.

Cultivation activities and cultivation with light assist will occur seasonally with 2 harvests. The following energy information describes the current project as it is, while on generators. Lights are only used when weather conditions do not allow for natural light to be sufficient for growth. Drying and processing activities consume power but are executed quickly in an efficient manner to minimize time of generator use.

Generator #1 is 25kw diesel generator and is used primarily for domestic purposes and ancillary cannabis activities that have smaller energy requirements. It is used when the higher-powered generator is not necessary. See chart below for monthly rates.

Generator #2 is a 45kw Diesel Generator that is used for domestic, ancillary cultivation activities and cultivation when needed for cultivation activities. Applicant uses an average of 30 days of light assist per cultivation cycle. All usage weather dependent. Chart below based on average year where rainfall extends into May 15th and begins again on Oct 15th of the year. Sunny dry period from May 16th to Oct 14th of every year. See chart below for monthly usage.

Generator #3 is a 75kw diesel emergency back-up generator that is unused unless both primary generators are non-functional. In cases where the generator is used, it is only used short term, until necessary repairs on the primary generators can be made.

Current power requirement for mixed light greenhouses is 37,000 watts of power total for all seven existing greenhouses. Each mixed light greenhouse has 1,000-watt lights, and several industrial fans. The drying shed also has fans and dehumidifiers. Expanded power requirement for mixed light greenhouses is 43,000 watts of power total for all the nine greenhouses for the expanded project. All wattage less than 6 watts per square foot qualifying as a Tier 1 Mixed Light cultivation with Department of Cannabis Control. There propagation greenhouse has supplemental lighting fixtures. These fixtures are small string lights with LED bulbs. Maximum output of 400 watts at peak usage.

Total number of lights in each greenhouse may vary, depending and on sun position or shadowing from existing trees near the greenhouses. The total number of lights on the project will not change, only the number of lights in each greenhouse may vary. Total number of lights for this project is 39 or less for the current project or 45 or less for the expanded project.

Locations and Wattages

Greenhouse	Size of Greenhouse	Number of Lights (May Vary)	Current Wattage
Greenhouse 1	4,060ft ²	10	1,000w/ea. 10,000w total
Greenhouse 2	1,200ft ²	3	1,000w/ea. 3,000w total
Greenhouse 3	3,776ft ²	10	1,000w/ea. 10,000w total
Greenhouse 4	2,944ft	8	1,000w/ea. 8,000w total
Greenhouse 5	400ft ²	2	1,000w/ea. 2,000w total
Greenhouse 6	320ft ²	2	1,000w/ea. 2,000w total
Greenhouse 7	400ft ²	2	1,000w/ea. 2,000w total
	Total	37	37,000watts
Proposed Greenhouse 8	1,000ft ²	3	1,000w/ea. 3,000w total
Proposed Greenhouse 9	900ft ²	3	1,000w/ea. 3,000w total
	Total	43	43,000watts

Cultivation occurs in two cycles. Cycle one begins in late February of every year and cultivation ends in early July. Cycle two begins in May and ends in late Oct/ early Nov depending on Cannabis strain choices. Propagation Space is utilized from Feb through April and vegetative plants are moved into flowering greenhouses in April. New vegetative plants are started in the propagation greenhouses in May and moved into Flowering Greenhouses in July.

Flowering greenhouses receive light assistance in April through early June and late September through October depending on weather. Flowering greenhouses only receive light assist June through September if needed due to unexpected, unusual weather. Fans and dehumidifiers are used frequently in these greenhouses throughout the season and powered by the domestic generator. Only when light assist is necessary in flowering greenhouses will the 45kw generator be in operation. All other operations are carried out by the 25kw generator.

OSHA requirements have been met by the applicant and Hazmat training will be completed by the end of 2022. All hazmat materials are removed from site immediate and not stored in amounts that exceed threshold hold requirements for CUPA.

Energy Consumption Table

Type of Power Use	Hours per month												
Generator	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
45 kw Diesel Cannabis Operations	0	0	0	180	186	60	62	60	180	186	0	0	914 hours
25 kw Diesel Cannabis Operations (Hours in use while no domestic)	0	112	124	0	0	0	128	0	0	128	124	0	616 hours
25 kw Diesel Domestic Operations	196	178	196	190	196	190	196	196	190	196	190	196	2,310 hours
Total hours of energy generation Cannabis	<i>0</i>	<i>112</i>	<i>124</i>	<i>180</i>	<i>186</i>	<i>60</i>	<i>190</i>	<i>60</i>	<i>180</i>	<i>314</i>	<i>124</i>	<i>0</i>	<i>2,310 hours</i>
Total hours of energy generation Domestic	<i>196</i>	<i>178</i>	<i>196</i>	<i>190</i>	<i>196</i>	<i>190</i>	<i>196</i>	<i>196</i>	<i>190</i>	<i>196</i>	<i>190</i>	<i>196</i>	<i>1,530 hours</i>
Total hours of energy generation Property	196	290	320	370	382	250	386	256	370	510	314	196	3,840

Calculations for 45 kw operations of light assist in Flowering greenhouses is 6 hours per day average April – June and September – October. Maximum light assistance June through August 2 hours per day average.

Calculations for 25 kw operations do not include time it is already in operations for domestic or light assist flowering to keep totals accurate. Energy calculations include fans, dehumidifiers, and trim machines. Trim machines only used during harvest in July, October, and November.

February through June propagation greenhouse will require an additional 4 hours a day of power. The 25kw will supply this power in addition to power used from domestic during the months of February and March. In April through June propagation greenhouse supplement will occur on the 45kw generator in conjunction with flowering lights.

In July, October and November drying and harvesting as well as processing will occur. Power usage will increase by 4 hours a day on 25kw domestic use generator.

Domestic Calculations based on 2 hours in the morning and 4 hours in the evening of generator use for domestic purposes. Additional 10 hours of emergency use added per month.