



EFFICIENT AND ECO-FRIENDLY POWER GENERATION

APPLICATION

Combined Heat and
Power (CHP)

MARKET SECTOR

Cannabis/Hemp

CLIENT

MBS Engineering –
Black Hemp Box

COMMISSIONED

2019

EQUIPMENT

GT333S

LOCATION

San Ramon, CA

FUEL

Low Pressure
Natural Gas

RESILIENT OFF-GRID ENERGY

FlexEnergy's channel Partner, MBS Engineering, designed a mobile natural gas-powered hemp drying unit, utilizing the Flex Energy GT333S generator. The unit is called the 'Black Hemp Box' and is capable of drying 75,000 lbs. of wet hemp per hour (altering it from 70% water to 5% water as it is prepared to be pressed for distillation and accretion of CBD oils).



The drying process of extracting CBD oil from hemp consumes significant amounts of thermal energy, to vaporize and expel water, in addition to electricity to power conveyors, separators, and other production machinery. CHP (combined heat and power) from Flex Turbines® is such an efficient and eco-friendly option for power generation that - when thermal loads are part of the power generation profile - the Department of Energy and the Environmental Protection Agency advise them.

Industry and commercial sectors are highly vulnerable to large-scale utility power outages from circumstances such as technical power failures, system overload, cyber-attacks and severe weather. Gas turbine generators can generate power 'off the grid' and are more disaster resilient than grid electric but do require a piped (gas) fuel source. Flex Turbines use the widest range of gas tolerance available and the Black Hemp Box contains its own fuel.

For the Black Hemp Box, the GT333S resides inside a semi-trailer and is comprised of a power/heat-generating unit and a drying unit. Power comes from a Flex Turbine with an electric starter with a combined electrical and thermal profile. Fueled by an onboard liquid propane gas fuel tank, the turbine is housed in an exterior 'blanket' or heat recapture shell. Ducting moves hot air and mass flow to the drying unit for the drying process, which consists of a hopper and conveyor, and super-heated air dries (without burning) plant matter. Assembly is minimal, as the point of the mobile hemp dryer is to permit rapid pack-up and redeployment, with minimal downtime or technical requirements.

Static gas turbine generators are already a popular option for cannabis grow rooms and greenhouses. Growers are paying approximately \$150,000 a month for 1.3 megawatts of power from the grid. The off-grid solution delivers power at about half that cost with the turbine financing and gas supply combined.



RESULTS

Reduced reliance on local utility power

Reduced utility bills

Meets strict California emissions standards

Reduced risk of shutdown due to outages