One of the most efficient ways of profiting solar energy is thermal power generation systems that collect and concentrate sunlight to produce the high-temperature heat needed to generate electricity. The other efficient way to produce renewable energy by wind power is using a vertical axis turbine where the main rotor shaft is set transverse to the wind while the main components are located at the base of the turbine. The idea of this design is to reduce installations by wind power concentration resulted by tent structures and solar power concentration via compact Fresnel reflector in unity.

The Variable speed operation of a vertical axis wind turbine could be used in order to make sure that power supply will be formed in the range of massive and even low amounts of power.

The structure’s shape designed regarding solar geometry and the wind rose. In order To utilize the maximum quantity of energy, the structure deflected in direction of sunlight beams. Besides according to the wind rose chart, wind from the north side is the most powerful, and that deflection will improve the wind absorption.

We inspired the design from the shape of native flower that grows in the United Arab Emirates which is known as a national flower called Tribulus. This beautiful flower perfectly evolved in the environment and has been so informative and instructive in terms of using sunlight.

The main turbine is isolated, and smart valves can be installed in gates to trap wind inside, turbine blades are properly designed to channelize wind to bottom to avoid waste of power.

Transparency and lightweight structure is harmonic with the traditional tents and also it has no negative visual impact on the area.

Focal concave mirrors that installed at the top forces the sunlight to concentrate on the central shaft where it will be transformed into the heat. The heat will circulate down where a thermal power station placed. Those mirrors are capable of surface charged self-cleaning shell.

A glass dome placed under mirrors surface, is a gallery that shows turbine rotation and can be used as a public space and a greenhouse that keeps plants away from sunburn.

Design calculations can change due to changing conditions. But with the research done, the amount of energy collected in this system is significant. However, more accurate calculations can be made by performing field experiments and field studies. Also, as a result of the expandable design, it is possible to increase the efficiency, by increasing the requirement elements with a proper arrangement. In the default mode, the estimated electrical energy generation are as follows:

Wind turbine: 500 KW \* 24 Hr \* 365 D =4380000 KW/H annually

Solar heat generator: 1000 KW \* 8 Hr \*365 D =2920000 KW/H annually

The water vapor that rises from the sea, drawn along with winds to the site. Also, thermal turbine vapors are blown into the wind turbine compartment, then dumped into a smaller compartment underneath dense and cooled. Large amounts of air moisture are converted to liquid, which can be used to cleansing or irrigating the plants, and the remaining air coming out of the enclosure, regarding a perceptible drop in its temperature, can be blown to the surrounding green space and the entire area that causes a tangible effect on the smoothness of the air. The tent structures used in the wind path are capable of collecting dust in the air, and the region's air with more of these duplicable structures can be much cleaner. The glass space at the bottom, due to protection from direct sunlight of the area, and the reflection from the surrounding into it creates a good atmosphere as a greenhouse and a comfortable urban community underneath the shadow of the building.