

# JCEB TRADERS (PTY) LTD

JCEB Traders (PTY) LTD is a company that specialize in energy saving and generation of energy. We are based in Port Elizabeth SA we are the sole agent in Africa for companies from Europe.

## PRODUCT LIST:

**Solar panels: From 10W -10MW.**

**Wind turbines: From 300W – 1.3 MW.**



**Hydro power: Our generation size is from 50kw - 100mw.**



**Diesel Generators: Cummins, Cat, Perkins, Man, Volvo and many more to choose from.**



**Power Factor Correction Energy Savers for domestic and Industrial use:** Our product saves from 10% up to 35% on your electrical usage. Our product comply with Eskom standards ESCO no 94874788 C E Fc, ROHS, Canadian standards , TUV, SGS. Rebates can be paid to client after test.



## **Single phase energy saver for domestic and office use model: MS1/MS2**

When transported, electricity is subject to numerous fluctuations and losses of charge as well as variations, leading to electricity peaks, exploitable by our electrical devices. Thus a part of the electricity delivered to our households is delivered in the form of exploitable overcharges, yet billed. These electricity peaks make u pay and consume more, however once a MS1/MS2 unit has been installed the electrical currents stabilize

The MS1/MS2 stabilizes the voltages and also reduces currents when appliances are switched on. The MS1/MS2 prevents the appliances from generating additional heat - which is a result of excess energy, that excess energy is wasted as it doesn't help to improve performance. You however still pay for that energy even if wasted. By stabilizing the voltage and currents the MS1/MS2 will ensure that no energy is wasted and thus optimizes the energy usage of all electrical equipment in your house.

An added benefit of the MS1/MS2 is that it prolongs the lifespan of the electrical equipment and thus ensures efficiency of equipment for a longer time. You therefore save money immediately and in the long run.

MS1/MS2 will reduce the energy usage and electricity bills with up to 50% a month. When considering the saving on every R100 you can clearly see how you can fight high living costs through our MS1/MS2 Energy Saver

### **How does the MS1/MS2 save electricity?**

Power factor is the percentage of electricity that's delivered to your house and used effectively, compared to what is actually wasted. For example, a 1.0 power factor means that all the electricity that's being delivered to your home is being used effectively by your appliances. However, most homes today have a 0.77 power factor or less. This means that about 77% of the electricity that is coming through your meter at your home is being used effectively; the other 23% is being wasted by your inductive load caused by some appliances (air condition, and any other appliance with Motor's is inductive load ). With a low power factor, the utility company (Eskom) has to deliver more electricity to do the same work. Now, with the MS1/MS2, it helps to increase the power factor in most cases to 0.99, and increasing the effective use of your electricity and lowering your meter reading.

### **Is the MS1/MS2 easy to install?**

Yes install to your DB Board by an Electrification

### **Are the MS1/MS2 sold with a guarantee?**

Yes. We provide a 1 Year off- shelf guarantee

### **Do I need one MS1/MS2 for each of my appliances?**

No. the rule applied is one MS1/MS2 per Distribution Board. Therefore only one MS1/MS2 is required for your entire household.

### **How does the MS1/MS2 save me on all my appliances**

This is achieved due to the fact that the power supplied by Eskom, passes through one point known as the Neutral bar. The electricity is then distributed to each circuit. This circuit is continuous and interlinked therefore, by installing the MS1/MS2; you are successfully affecting the entire household.

## MSR1000 WDBP Dynamic low voltage reactive power compensation cabinet

### 1. Advantages

- (1). High efficiency in improve power factor, obvious energy saving effect.
- (2). Reduce line loss and transformer loss absorb most port of harmonic current characteristic.
- (3). Long lifespan, especially in occasion of variable load and power factor, longing several times than switching type contactor.
- (4). Fast response within 10ms.
- (5). Non-contact switching, can applied to dust place or other places of high environment requirement.
- (6). Automatic heat elimination design
- (7). With following protection function:  
over-voltage, open -phase, single fuse over current, under voltage, inrush current, suppress the light harmonic
- (8). Equipped with reactive power self-controller.
- (9). The interval of switching time is adjustable, so that the reactive power consumption of the electric network can be controlled at a lower situation in order to improve the quality of the voltage , reduce consumption of distribution system and transformer.

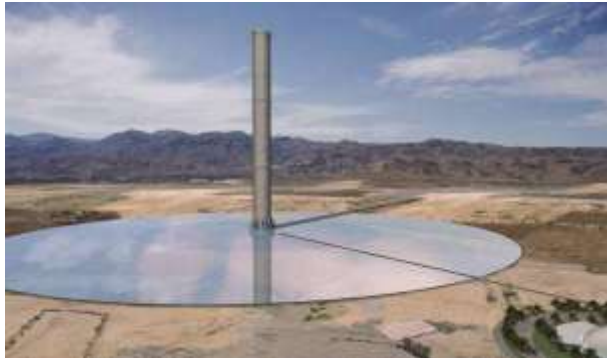
Place	Indoor
Long term over voltage	no exceed 1,1 Un
Long term over current	no exceed 1.35 UN ( including harmonic wave)
Rated capacity	60Kvar to 370 Kvar
Rated voltage	380V
Frequency	50Hz

.The index exceeds national special standard: TUV, CE, FCC, ROHS

Foreign Partners: Dot vn, Lafarge, GürIS, tracim cement, SCG VENUS tiles, Yanbu Cement co.



## CSP power generation.



Solar Chimney:

### Solar Power Tower

A solar power tower consists of an array of dual-axis tracking reflectors (heliostats) that concentrate light on a central receiver atop a tower. The receiver contains a fluid deposit, which could contain seawater. The working fluid in the receiver is heated to 500-1000°C and then used as a heat source for a power generation or energy storage system.

Power tower development is less advanced than trough systems, but they promise higher efficiency and better energy storage capability. Figure 17 below is a representation of Solar Power Tower. The two solar power towers in Daggett, California and the Planta Solar 10 (PS10) in Sanlucar la Mayor, Spain are working examples of this technology.

## 2. The use of three “old” technologies

Man learned to make active use of solar energy at a very early stage: greenhouses helped to grow food, chimney suction ventilated and cooled buildings and windmills Ground corn and pumped water.

The solar chimney's three essential elements - glass roof collector, chimney, and wind turbines - have thus been familiar from time immemorial.

A solar-thermal chimney simply combines them in a new way (Fig. 2).

Fig. 2: Principle of the solar chimney: glass roof collector, chimney tube, wind turbines.

Air is heated by solar radiation under a low circular glass roof open at the periphery; this and the natural ground below it form a hot air collector. Continuous 24 hours -operation is guaranteed by placing tight water-filled tubes under the roof. The water heats up during the daytime and emits its heat at night. These tubes are filled only once, no further water is needed. In the middle of the roof is a vertical chimney with large air inlets at its base. The joint between the roof and the chimney base is airtight. As hot air is lighter than cold air it rises up the chimney. Suction from the chimney then draws in more hot air from the collector, and cold air comes in from the outer perimeter. Thus solar radiation causes a constant up draught in the chimney. The energy this contains is converted into mechanical energy by pressure-staged wind turbines at the base of the chimney, and into electrical energy by conventional generators.

### The chimney:

The chimney itself is the plant's actual thermal engine. It is a pressure tube with low friction loss (like a hydroelectric pressure tube or penstock) because of its optimal surface- volume ratio. The up thrust of the air heated in the collector is approximately proportional to the air temperature rise  $\Delta T_{\text{col}}$  in the collector and the volume, (i.e. the height  $H_c$  multiplied by the diameter  $D_c$ ) of the chimney. In a large solar chimney the collector raises the temperature of the air by about 35 K. This produces an up draught velocity in the chimney of about 15m/s. It is thus possible to enter into an operating solar chimney plant for maintenance without difficulty.

Chimneys 1,000 m high can be built without difficulty. The television tower in Toronto Canada, is almost 600 m high and serious plans are being made for 2,000 meter skyscrapers in earthquake-ridden Japan. But all that is needed for a solar chimney is a simple, large diameter hollow cylinder, not particularly slender, and subject to very few demands in comparison with inhabited buildings.

There are many different ways of building this kind of chimney. They are best built freestanding, in reinforced concrete. But guyed tubes, their skin made of corrugated metal sheet, as well as cable-net designs with cladding or membranes are also possible. All the structural approaches are well known and have been used in cooling towers. No special development is needed.

### 3.4. The turbines:

1. Using turbines, mechanical output in the form of rotational energy can be derived from the air current in the chimney. Turbines in a solar chimney do not work with staged velocity like a free-running wind energy converter, but as a cased pressure-staged wind turbo generator, in which, similarly to a hydroelectric power station, static pressure is converted to rotational energy using a cased turbine - in this application installed in a pipe. The power output of a cased pressure-staged turbine of this kind is about eight times greater than that of a speed-stepped open-air turbine of the same diameter.
2. Airspeed before and after the turbine is about the same. The output achieved is proportional to the product of volume flow and the fall in pressure at the turbine. With a view to maximum energy yield the aim of the turbine regulation system is to maximize this product under all operating conditions.
3. Blade pitch is adjusted during operation to regulate power output according to the altering airspeed and airflow. If the flat sides of the blades are perpendicular to the airflow, the turbine does not turn. If the blades are parallel to the air flow and allow the air to flow through undisturbed there is no drop in pressure at the turbine and no electricity is generated. Between these two extremes there is an optimum blade setting: the output is maximized if the pressure drop at the turbine is about two thirds of the total pressure differential available.

## Street Lights and household electrical generation turbine:

