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1

OPV Panel

Organic Photovoltaic Panel is capable of producing 100W of energy per unit area. It is mainly characterized by its lightweight, flexible and translucent properties. The conversion efficiency is approximately 10%.

2

Transparent pulp with added resin

This is a new technologies will be applied to transparent OLED substrates, substrates of organic thin-film photovoltaic cells. The transparent sheet has a thickness of 100µm, a light transmittance of 87.8%.

3

OLED Panel

Organic Light Emitting Diodes Panel is characterized by its relative lightweight, flexibility and translucent properties. It emits colorful lights at night.

4

Piezoelectric Pole

This wind power generator turns the flexing of an omnidirectional shaft directly into electricity, using piezoelectric materials.

5

Electrokinetic Remediation

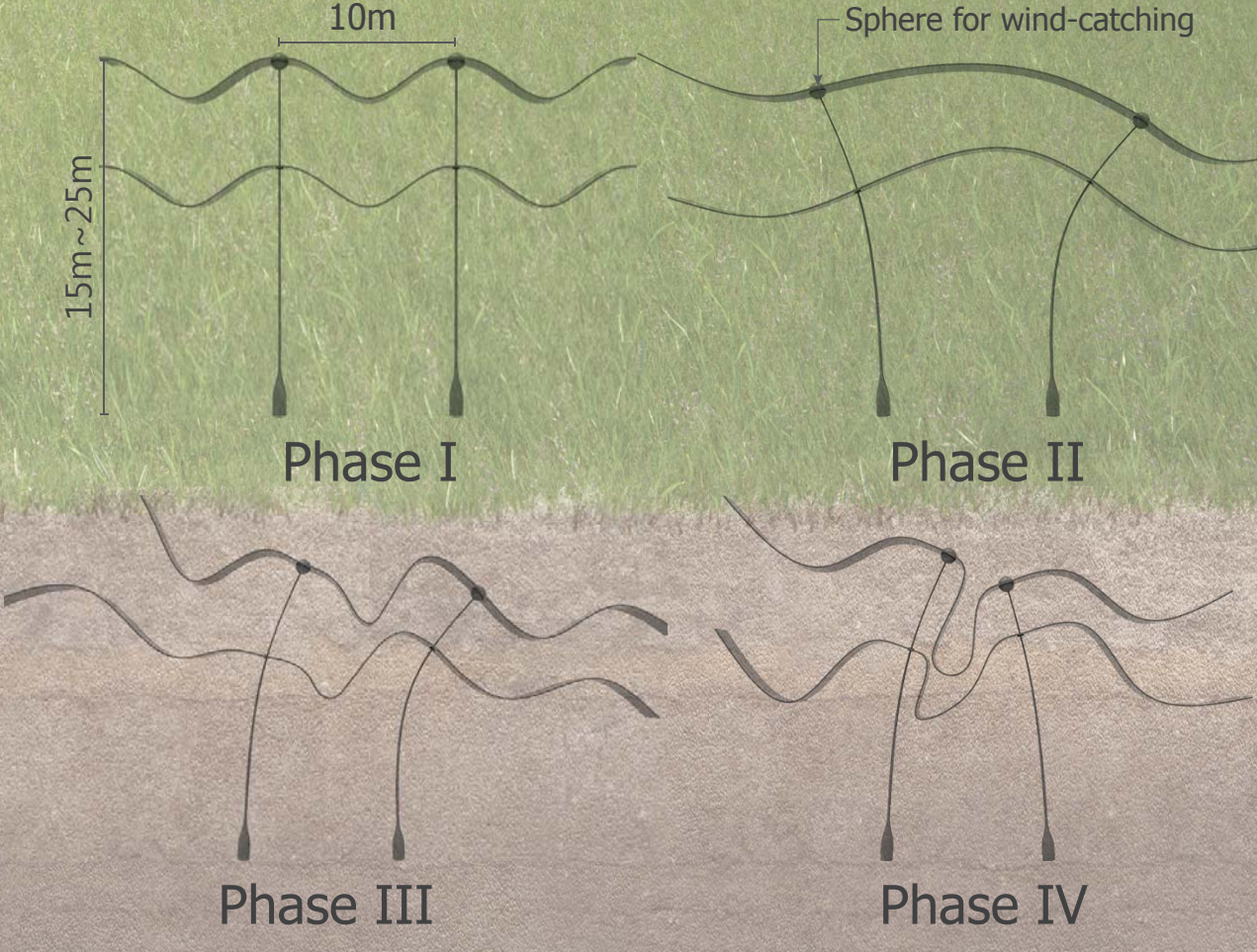
Installation of electrodes in the soil that induce conductive physical/ chemical reaction with the addition of electrical current, the contaminants are then extracted and removed through this technique.

BEYOND THE WAVE

The flexible pole (Piezoelectric Pole) consists of a flexible shaft and several embedded piezoelectric discs that are alternately sandwiched in-between rigid backup plates. This produces energy by bending pressure. The bottom width of the pole is 600mm with a diameter of 300mm in the middle and a height range of 15 to 25 meters, the amount of energy generation depends on the height of the pole. The ribbon consists of transparent organic solar cell developed by MIT; Transparent pulp with added resin developed by Kyoto University that acts as substrate along with the flexible OLED panel. The ribbon is a flexible material that responds to the movement of the wind; it is thin, lightweight while maintaining some degree of resilience for bending. The OPV Panel attached to 1.5m wide ribbon can generate energy and this can be used as lighting energy during night time through OLED. The display panel in the lower part of the pole indicates the amount of energy generated and CO₂ reduction amount, showcasing energy saving effects in real time.

The amount of energy generated through this method is accumulated and recharged in the lower part of the pole; the total generated energy per year is expected to be 4,229MWh. This is the actual amount of energy consumed annually by 1,237 households in Copenhagen (Denmark consumes 3,420kWh of energy per household per year) and will be supplied to the public institutions, facilities and households nearby. In addition, electrodes installed at the bottom of poles will serve the purpose of purifying contaminated soils. The electrodes will induce conductive physical/ chemical reactions to extract and remove contaminants; this idea is based on Electrodynamics soil remediation technology.

Operation



Bending

Stretching

Squeezing

Energy Media Board

Anode+

Cathode-

Contaminated Soil

