

# HYDRASPORE SYMBIONT

## RENEWABLE EVANESCENCE



ONE HSS = 11 MWh/yr



56 HSS = 897.7 MWh/yr



GRID CONNECTED



150 HOMES

### ESTIMATED NET ENERGY GENERATED

An approximate 897689.8 kWh or 897.7 MWh of electricity is generated by mechanical energy produced by the spore engine from evaporation. The total surface area of water available is 25,619 sq.m that comprises the energy farm. From the studies and experiments run by the referenced group of scientists, we can assume the power available from open water surfaces in similar regions like Melbourne are expected to be up to 3-4W/m<sup>2</sup> of electrical energy generated. Given this, the net energy produced by one large HydraSpore Symbiont is estimated at 11 MWh.

The amount of electricity consumed by a home with four members, in Victoria, is approximately 6000 kWh, i.e. 6MWh. Hence, the Net energy produced annually can electrify up to 150 homes in cities like Melbourne. Evaporation continues 24/7, so the engines, which sit on the water's surface, could provide power even at night — unlike solar panels.

### ENVIRONMENTAL IMPACT

Periodic droughts and consistently high summer temperatures deplete Melbourne's water supplies, and climate change may exacerbate the long-term impact of these factors. These HydraSpore Symbionts can help conserve the water with their umbrella shaped canopies that results in potential water savings. The proposed Symbionts not only produce electricity from their innate ability to convert energy from evaporation into work but also reduce the annual evaporation of the region.

These structures can be installed almost anywhere around the world to generate renewable energy. Evaporation happens at night and in any location can be a feasible site with a drier climate being more favorable. Dry air is better in terms of energy conversion efficiency. Salinity, however, can lead to corrosion of different parts of the devices. So, appropriate measures must be taken to mitigate this issue in coastal areas.



Primary boundary water surface area	10466	sq.m
Secondary boundary water surface area	15153	sq.m
Total water surface area	25619	sq.m
Potential Power available per sq.m. per hour	4	W
Potential Net Power Availability per hour	102476.0	W
	102.5	kW
Total number of hours in a year	8760	hrs
Annual Energy Generated by the Symbiont Park	897689.8	kWh
	897.7	MWh
Power generated by One Hydra-Spore Symbiont	11002.56	kWh
	11.002	MWh
Energy demand per house (vic.gov.au)	6000	kWh
No. of homes powered by Hydra-Spore Symbiont park	150	Homes

