

ENDLESS SUMMER

DURING THE WINTER MONTHS, COPENHAGEN HAS SHORT DAYS AND LONG NIGHTS. ENDLESS SUMMER USES ENERGY FROM THE MOON TO CREATE ARTIFICIAL SUNLIGHT.

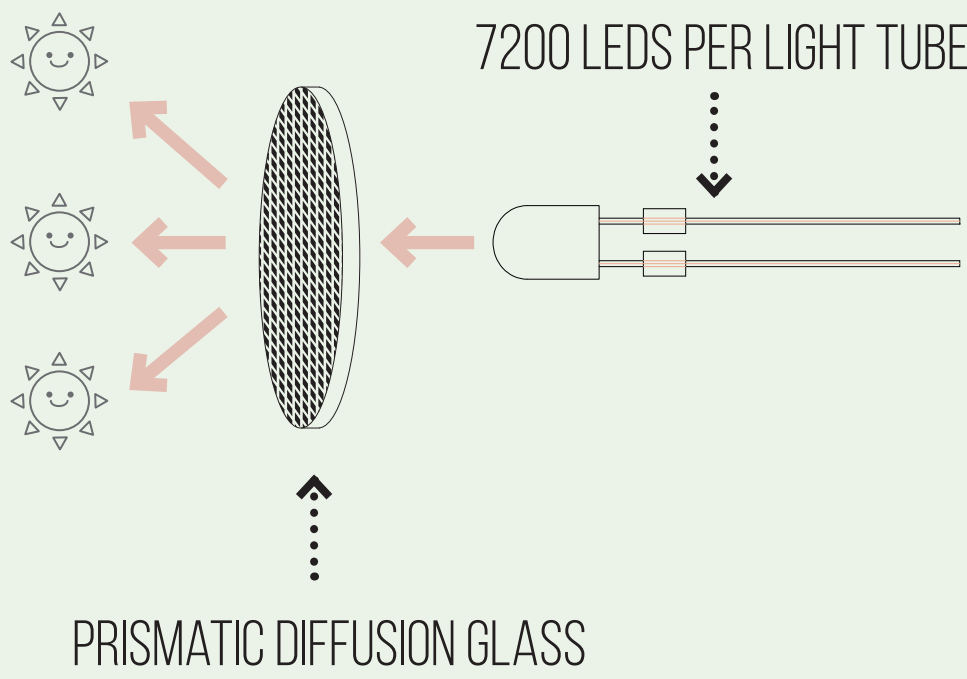
ENERGY

THE MOON'S GRAVITATIONAL PULL CAUSES THE OCEANS' TIDES. ENDLESS SUMMER CONVERTS THIS KINETIC ENERGY INTO ELECTRICAL ENERGY USING THE VIVACE CONVERTER (VORTEX INDUCED VIBRATIONS FOR AQUATIC CLEAN ENERGY), DEVELOPED BY UNIVERSITY OF MICHIGAN. EACH VIVACE CONVERTER CONSISTS OF TWO SIDEWALLS WITH HORIZONTAL CYLINDRICAL CROSS BARS. THE CROSS BARS ARE ORIENTED PERPENDICULAR TO THE DIRECTION OF THE WATER CURRENT. AS THE CURRENT PASSES OVER THE ROUND CROSS BARS, TINY VORTEXES ARE CREATED, CAUSING THE BARS TO MOVE UP AND DOWN. THIS, IN TURN, MOVES A MAGNET ALONG A METAL COIL TO CREATE DIRECT CURRENT (DC) POWER. ONCE CONVERTED TO ALTERNATING CURRENT (AC) POWER, THE ELECTRICITY CAN BE USED TO POWER THE ENDLESS SUMMER INSTALLATION AND BUILDINGS IN COPENHAGEN. VIVACE IS DISTINCT FROM OTHER FORMS OF HYDROPOWER IN THAT IT IS ABLE TO CAPTURE ENERGY FROM SLOW-MOVING WATERS AND DOES NOT REQUIRE A DAM OR TURBINES. IN ADDITION TO CAPTURING ENERGY FROM THE TIDES, IT MAY ALSO CAPTURE ENERGY FROM OTHER MOVEMENT IN THE WATER BODY. IT IS CONSIDERED LESS EXPENSIVE THAN WIND AND SOLAR ENERGY, MAKING IT A VIABLE COMPETITOR WITH CONVENTIONAL ENERGY SOURCES.

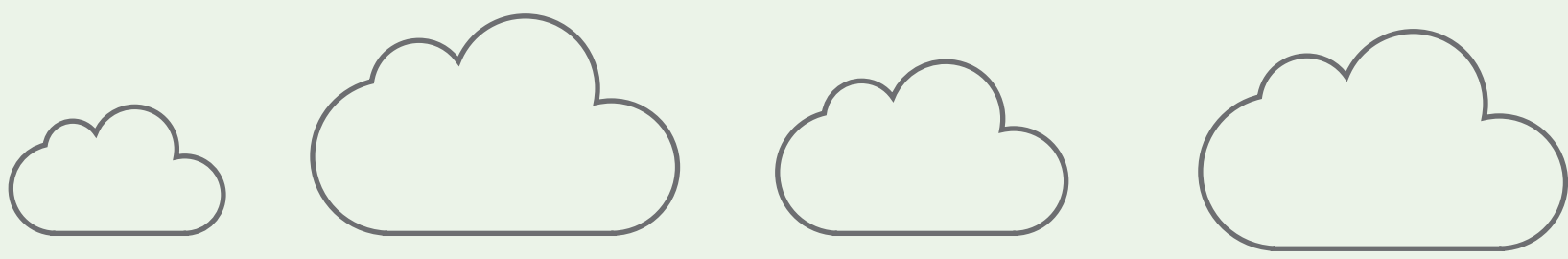
VIVACE WATER ENERGY

WATER CURRENTS FLOW THROUGH THE VIVACE CONVERTERS. CURRENTS AS SLOW AS 0.25M/S CAN EXTRACT ENERGY WITH HIGH POWER CONVERSION RATIO.

AS THE CURRENTS PASS THROUGH, THE CYLINDERS MOVE UP AND DOWN, CREATING VORTEXES THAT ARE THEN HARNESSSED FOR ENERGY.



ENDLESS SUMMER



ON AVERAGE THERE ARE ONLY 45 HRS OF SUN PER MONTH IN THE WINTER. THE PREVAILING WINDS BLOW FROM THE ARCTIC ICE SHEET, SUMMER TEMPS ONLY REACH 8-20°, AND THERE 68-70MM OF RAIN DURING RAINY SEASON.

= DREARY COPENHAGEN

5.5 CENTS PER KILOWATT HOUR,
500-KILOWATT PER UNIT