

Thermoelectric Generator Bill of Materials						Notes
Description	Item	Quantity	Price Per Unit	Total Price	Link	
1 Thermal Glue	30g X-Large Thermal Conductive Silicone Plaster Glue Adhesive - LED GPU Heatsink	1	9.85	9.85	http://www.ebay.c	
2 High Temperature Epoxy	Blue Magic 8024 ThermoSteel High-Temp Metal Repair - 24 oz.	1	30.62	30.62	https://www.amaz	appears to not be waterproof
3 Fiberglass Mat	Fiberglass, BUY 3 GET 1 FREE, 1.5 Oz Chopped Strand Mat, 50" x 108" (3Yd Long) 36 Sq. Ft.	1	26.99	26.99	https://www.amaz	
4 Terminal Blocks	5 Pcs 600V 15A 12 Positions 12P Dual Rows Covered Barrier Screw Terminal Block	2	7.19	14.38	https://www.amaz	
5 Water Pump	Delavan 2200 Series Diaphragm Pump 12V, 40 PSI, 1.0 GPM, Deman Pump	1	29.4		https://www.amaz	
	water pump		15	15	http://www.ebay.c	
6 Thermal Grease	Hainziye 100g White High Performance Thermal Grease Compound Silicone for CPU VGA Heat Sink	1	11.99	11.99	https://www.amaz	
7 Buck/Boost Voltage Converter	DROK DC Buck Boost Converter Module Power Supply 80W 12V 24V Voltage Regulator Input 7-32V Output 1-30V Adjustable Voltage Converter Constant Volt Amp for Battery Charging Solar Energy LED Driver	4	21.99		https://www.amaz	
8 Battery Charge Controller	Docooler 20A 12V/24V Solar Charge Controller Solar Panel Battery Regulator Safe Protection	4	9.5		https://www.amaz	
			TOTAL PRICE:	108.83		
	How much fiberglass mat do we need???					
	fiberglass mat 3.4mm thick... doesn't exist, but 1.5 ounce fiberglass mat is about 1/16in thick, so two layers would be 1/8in (=0.125in) thick, and the thickness of the space to fill is 3.4mm = 0.133858, so two layers of 1.5 ounce fiberglass mat would be close.					
	There is 77728.8mm ² of free pipe surface, or 120.479881in ² or about 0.837 ft ² . so multiply that by two to get the amount of mat we need: about 1.67ft ² , plus we need to wrap the whole system in it, so add several square feet.					
	How much thermal glue do we need???					
	Marcin wants to just use enough glue to keep the plates in place, but not so much that they are difficult to remove. The difference between the amount used and the amount that it would take to cover the entire plate will be made up for by non-adhesive thermal grease. The grease comes in a 100g jar, or about 1/2 gram per side per module, which we guess will be enough. The glue comes in 30g tubes, so three tubes would be almost 1/2 gram per side per module.					