

Renewable Energy Toolkit

Team A5

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Project Description

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The toolkit that tests renewable energy sources in various environments.
Depending on the availability of the factors of nature.

Design Description

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The design that we came up with is a suite case that includes different power sources: Photovoltaic (PV) solar, Biomass, Water wheel, and Wind turbine.

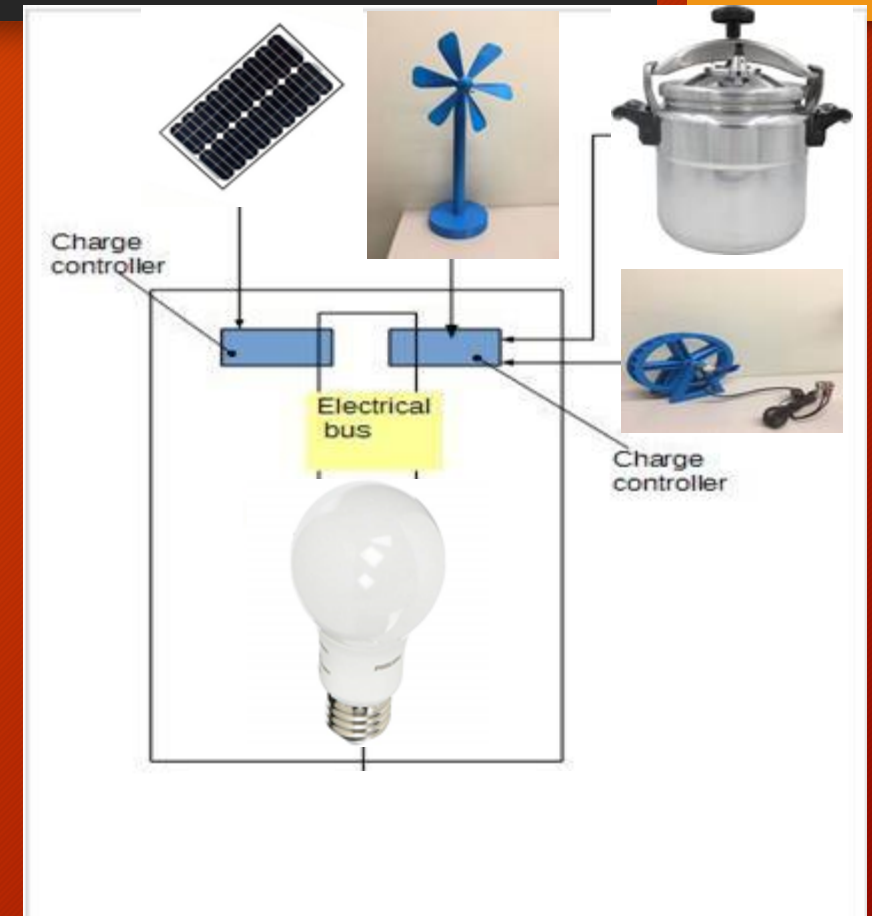


Figure 1: Functions of our design

Design Description: Photovoltaic Solar Panel 'PV'

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- Power (17.5 V - 1.71 Amps - 30 Watts)*
- Price: \$60.17*
- Size: 36 cells 27" L x 15" W x 3" H*
- Location: Availability of Sunlight

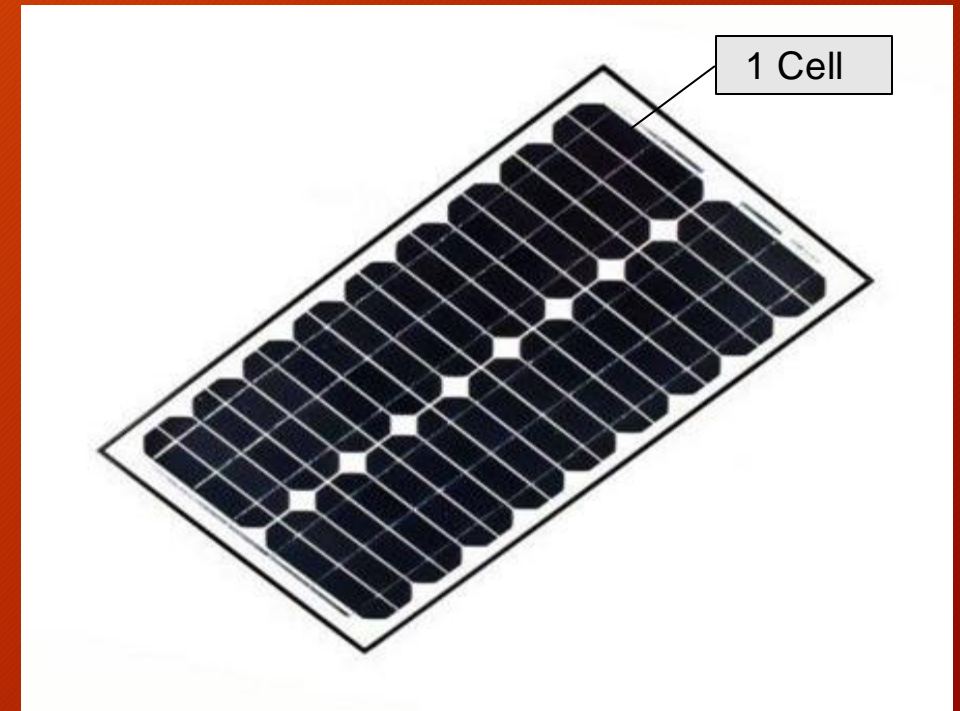


Figure 2: Solar PV [1]

Design Description: Biomass

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- Power
- Price: \$25.13
- Size: 24 Cm (7 Ltr)
- Location: Somewhere next to forest

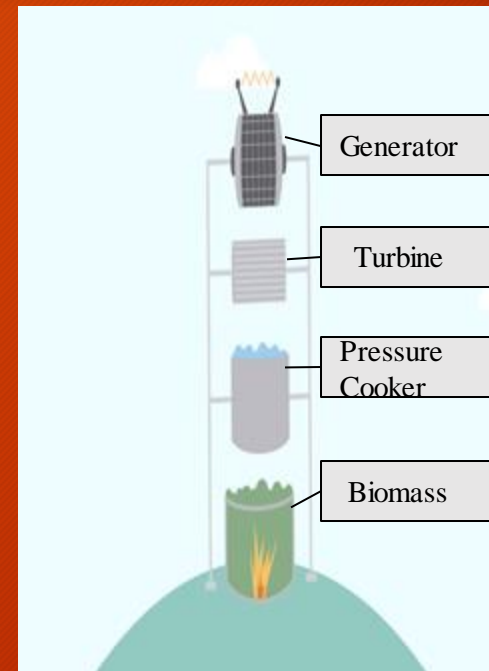


Figure 3: Biomass [2]



Figure 4: Pressure Cooker [3]

Design Description: Water Wheel Turbine

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- Power: (9V - 6 Amps - 54 Watts)
- Price: \$50.52
- Size: area:13.36² in , width: 3.30 in
- Location: Near rivers

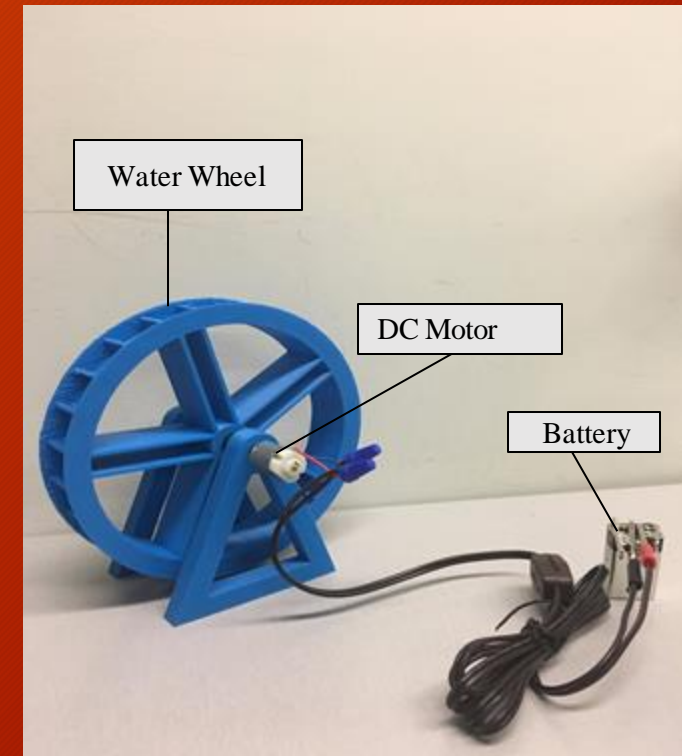


Figure 5: Water Wheel Turbine

Design Description: Wind turbine

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- Power: (9V - 6 Amps - 54 Watts)
- Price: \$31.49
- Size: height: 12 in , width: 2.45 in
- Location: Open places or high places



Figure 6: Wind Turbine

Design Description: Load

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- Light Bulb
 - 4 lights bulb
 - Best source of load for now
 - Board



Figure 7: Light Bulbs [4]

Design requirements

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Customer Requirements:

- Low Cost
- Size
- Educational
- Generate power for number of environment
- Portable

Schedule & Budget

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Table 1: Budget

Source	Cost
PV Solar Panel	\$60.17
Biomass	\$25.13
Water Wheel Turbine	\$50.52
Wind Turbine	\$31.49
Load	\$6.48 for 4 Lights Bulbs
Total= \$173.79	

Schedule & Budget

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Table 2 : Schedule of assignments

	A	B	C	D	E	F	G	H	I	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	
1			November			December				February						March			April					
2	Task	Who	10	17	24	3	6	8	13	1	3	5	10	12	21	24	26	1	5	12	9	23	30	
3	1 Final Proposal Report	Team																						
4	2 Peer Evaluation II	Team																						
5	3 Analytical Analyses II Team Memo	Team																						
6	4 Final CAD package and BOM	Team																						
7	5 Final Prototypes Summary	Team																						
8	6 Hardware Review 1	Team																						
9	7 Peer Evaluation I	Team																						
10	8 Analytical Analyses III	Team																						
11	9 Hardware Review 2	Team																						
12	10 Midpoint Report	Team																						
13	11 Peer Evaluation II	Team																						
14	12 Final Product Testing Proof	Team																						
15	13 UGRADS	Team																						
16	14 Final Report and CAD package	Team																						

Questions?

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References:

- https://www.photobox.co.uk/my/photo?album_id=5089667012&photo_id=21863087830 [1]
- <https://saudi.souq.com/sa-en/trust-aluminium-pressure-cooker-24cm-7ltr-aby001-23477752/i/> [2]
- <https://www.walmart.com/ip/ALEKO-Solar-Panel-Monocrystalline-30W-for-any-DC-12V-Application-gate-opener-portable-charging-system-etc/45733290?wmlspartner=wlp&adid=222222227033069627&wl0=&wl1=g&wl2=c&wl3=67309198112&wl4=pla-131211458912&wl5=9030289&wl6=&wl7=&wl8=&wl9=pla&wl10=8175035&wl11=online&wl12=45733290&wl13=&veh=sem> [3].
- https://www.homedepot.com/p/60-Watt-Equivalent-Halogen-A19-Long-Life-Light-Bulb-4-Pack-457374/206111398?cm_mmc=Shopping|THD|google|&mid=sXzPPyIaJ|dc_mtid_89037lm25188_pcrd_222164609488_pkw__pmt__product_206111398_slid_ [4].