

# Powering Through a Blackout

Make affordable small-scale investments in renewable energy and batteries so you are better prepared the next time the lights go out.



Please check out our website for more information  
Scan the QR code or use the link below  
[www.cgtc-usvi.com/powering-through-a-blackout](http://www.cgtc-usvi.com/powering-through-a-blackout)



# Powering Through a Blackout

Off-grid devices to save your life

## Lighting

# 1



Inflatable Solar Lantern + Powerbank\*: \$15

Solar LED Light-bulb\*: \$10



Outdoor Motion Sensor Solar Light\*: \$20

## Communication: Cell Phone and Radio

# 2



Solar Powerbank\*: \$30

Solar & Hand Crank Radio with Flashlight & USB Charging\*: \$30



## Water & Cooking

# 3

Solar Shower: \$15



Solar Water Pump: \$150-\$250

Water Filter\*\*: \$25



## Comfort

# 4

USB Powered Mosquito Zapper: \$15



USB Powered Fan: \$15

\*\*Non powered but life-saving

\*Some solar powered items can also be charged using a USB cord.

# Powering Through a Blackout

What can I power using batteries?

## Portable Powerbanks 1

What can you power?

- cellphones, USB devices, wifi, laptops



## Car Battery + Inverter 2

What can you power?

- Small water pump
- Battery power tools
- Laptop, small TV

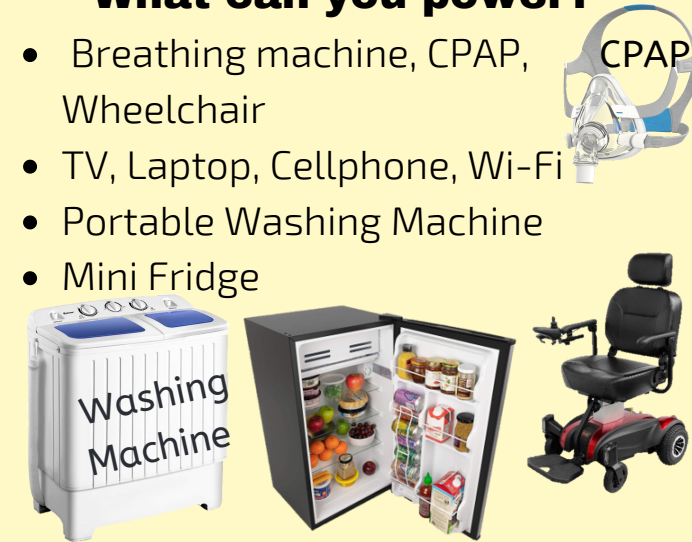


\*Charge for 30-60 min before starting up your engine

## Marine or RV Battery + Inverter 3

What can you power?

- Breathing machine, CPAP, Wheelchair
- TV, Laptop, Cellphone, Wi-Fi
- Portable Washing Machine
- Mini Fridge



Batteries can be charged with different sources of power. It is best to use a renewable source, such as solar.

## 1 Access Power from Battery

- \*Battery can be a car battery, deep cycle lead-acid, AGM or Li-ion.
- \*Inverter size depends on number of watts. 500-2000 W is recommended.

USB Powerbanks\*  
\$15-30

Large Powerbanks\*  
\$50-200

\*Power battery using charger cord or device

\$175

Battery\*

+

\$150-500

Inverter

## 2 Charge Battery using Solar PV

- \*Connect 2 to 4 panels in parallel to increase current
- \*A charge controller protects the battery from over-charging or depleting

\$200

100 W Solar PV Panel

+

\$50

Charge Controller

# Powering Through a Blackout


How much power do I use?




Time plugged in  
out of 24 hours




Energy: kWh/day

1  = 0.1 kWh

































## Under 10 Watts **1**

Cell phone		
LED Lightbulb		
Radio		
Wi-Fi Router		 





































## 10-50 Watts **2**

Battery Power Tools		
Mini Water Pump		   
Laptop		   
Small Floor Fan		   
CPAP Machine		   

## 50-250 Watts **3**

Portable Washer		
TV		  
Mini Fridge		    
Electric Wheelchair		          x 2
Breathing Machine		          x 9

## 250-2,000 Watts **4**

Microwave		    
Washing Machine		    
Regular Water Pump		     x 2
Regular ENERGY STAR Fridge		     x 2
Electric Stove		     x 4
Single Room A/C		     x 8

# Powering Through a Blackout

How much power do I use? Give me the numbers!

## Under 10 Watts **1**

Cell phone (*1.5 hour charge*)

- 2 - 6 W, 0.005 kWh

LED Lightbulb (*run for 8 hours*)

- 4 - 13 W, <0.07 kWh

Radio (*all day*)

- 1 - 2 W, 0.04 kWh

Wi-Fi Router (*all day*)

- 2 - 20 W, 0.14 kWh

## 10-50 Watts **2**

Battery Power Tools (*1 hour*)

- 30 - 60 W, 0.04 kWh/day

Mini Water Pump (*6 hours*)

- 50 - 60 W, 0.36 kWh/day

Laptop (*plugged in 6 hours*)

- 20 - 100 W, 0.4 kWh/day

Small Floor Fan (*8 hours*)

- 55 W, 0.44 kWh/day

CPAP Machine (*12 hours*)

- 30 - 60 W, 0.54 kWh/day

## 50-250 Watts **3**

Portable Washer (*30 min*)

- 250 W, 0.01 kWh/day

TV (*5 hours*)

- 20 - 100 W, 0.3 kWh/day

Mini Fridge (*cycling, ~4-5 hours*)

- 85 - 200 W, 0.65 kWh/day

Electric Wheelchair (*8 hours charge*)

- 90 - 325 W, 1.7 kWh/day

Breathing Machine (*all day*)

- 120 - 600 W, 8.6 kWh/day

## 250-2,000 Watts **4**

Microwave (*30 min*)

- 600 - 1,800 W, 0.6 kWh/day

Washing Machine (*1 hour*)

- 400 - 1,300 W, 0.85 kWh/day

Regular Water Pump (*3 hours*)

- 250 - 1,100 W, 2 kWh/day

Regular ENERGY STAR Fridge (*cycling*)

- 200 - 725 W, 2.1 kWh/day

Electric Stove (*2 hours*)

- 1,000 - 3,000 W, 4 kWh

Single Room A/C (*8 hours*)

- 500 - 1,500 W, 8 kWh/day

## Sources:

- <http://energyusecalculator.com/>
- <https://keepsafeguide.enterprisecommunity.org/en/reduce-your-energy-use>
- <https://www.nytimes.com/wirecutter/blog/set-up-off-grid-solar-power/>
- <https://www.nytimes.com/wirecutter/reviews/emergency-preparedness/>

## Where can I purchase small renewable energy devices and batteries?

- Hardware store
- Major Online Retailer
- Ship directly from the company

