**Abstract**

After Hurricane Maria hit Puerto Rico in 2017, millions of Puerto Ricans were left without power for almost a year. As a result, communication, access to water, electricity, and medical devices were abruptly taken from communities causing multiple effects on the surrounding populations. When a natural disaster strikes, electrical grids are completely demolished, leaving Puerto Rico with no source of power. Multiple problems arise dealing with powering medical devices, telephones for communication, and lights in individual buildings.

**Background**

- **Natural Disasters**
- **Weak Electrical Grids**
- **Economic Debt**
- **Immediate Medical Needs**
- **Power Loss**
- **Slow Reaction Time/Unpreparedness**
- **Electricity Required For Powering Medical Devices**

**The Problem**

- Power Loss
- Slow Reaction Time/Unpreparedness
- Immediate Medical Needs
- Electricity Required For Powering Medical Devices

**Objective**

To provide Puerto Ricans in rural communities short-term energy sources for medical needs after a natural disaster until the electric grid can be restored.

**Research**

*Surveyed reported problems post Hurricane Maria*

- Problems Receiving Medications: 29%
- Problems Receiving Respiratory Equipment: 12%
- No Power At Medical Facilities: 5%
- No Water At Medical Facilities: 6%
- Problems Reaching 911: 3%

- Summary: A little power can have a big impact

- Emergency visits due to mental health increase a couple days into a blackout
- Phones make people feel more connected/loved
- Lack of electricity/transportation increases substance abuse

**Charging Methods**

- **Solar Panel**
  - ~10-15 Hours
- **Grid Access**
  - ~6 Hours
- **Car Generator**
  - ~9 Hours

**Our Solution**

**Energise Puerto Rico’s Power Station ~ High Capacity Battery and Mobile Solar Panel**

- 110 W
- 80-120 W | 2-3 Hours
- 30-60 W | 10+ Hours
- 40 W | 8-10 Hours
- 6 W | 100+ Hours
- 8-10 W | 30+ Times
- 250 W | 1.5 Hours

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**References**