

PIEZOWALK

**YOUR STEPS HAVE THE POWER TO
CHANGE THE WORLD**



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Problem Statement



LACK OF ELECTRICITY

Lack of electricity in rural areas is a big problem in a country like India



SUSTAINABILITY ISSUE

By utilising renewable sources of energy PiezoWalk tends to save lives by reducing the number of deaths caused by the lack of electricity, in addition to making the hospital self-sustainable in terms of electricity consumption thorough the use of our product.



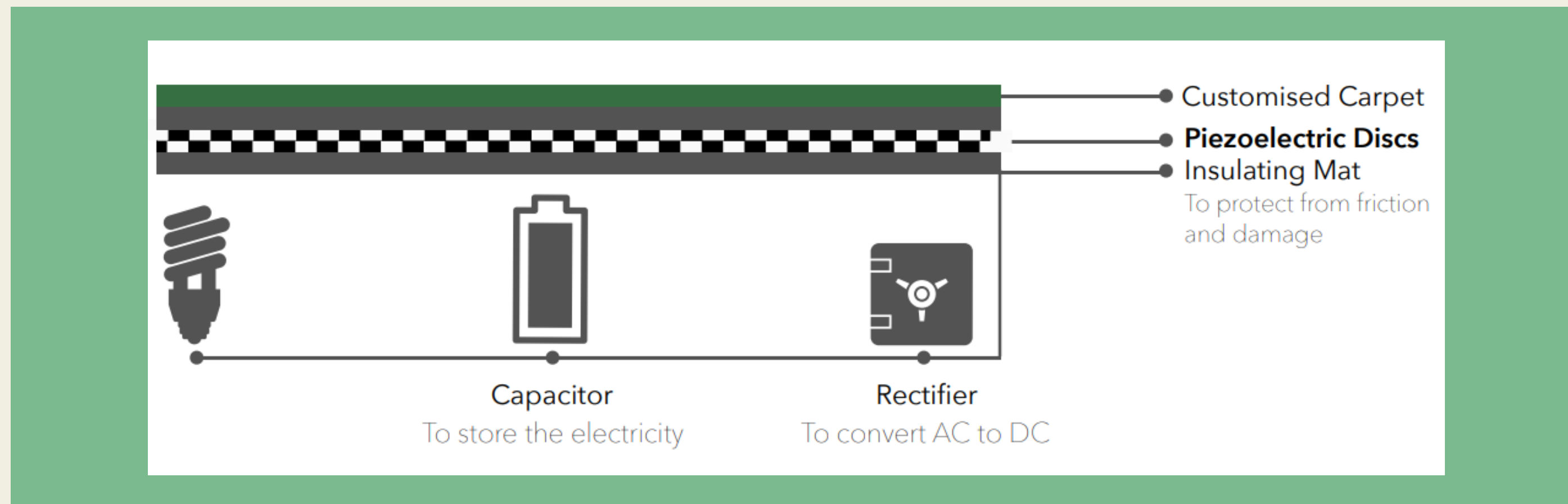
HEALTH HAZARD

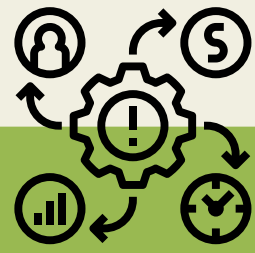
Many people die due to the lack of timely treatment in rural hospitals because of unavailability of electricity.



Functional View

- **Implementation:** by developing a mat to convert mechanical energy to electrical energy by placing piezoeletronic crystals in the mat that produce an electric impulse when stretched or deformed.
- We can create this energy by using the mat to capture the mechanical compression of people walking and turn it into power.
- The absorbed power will power a PIC microcontroller that will display how much energy is being harvested in real time for educational purposes. This energy is free and does not come from the power grid.





IMPACT

1

**AVAILABILITY OF
ELECTRICITY TO
EVERYONE
IN THE LONG RUN.**

2

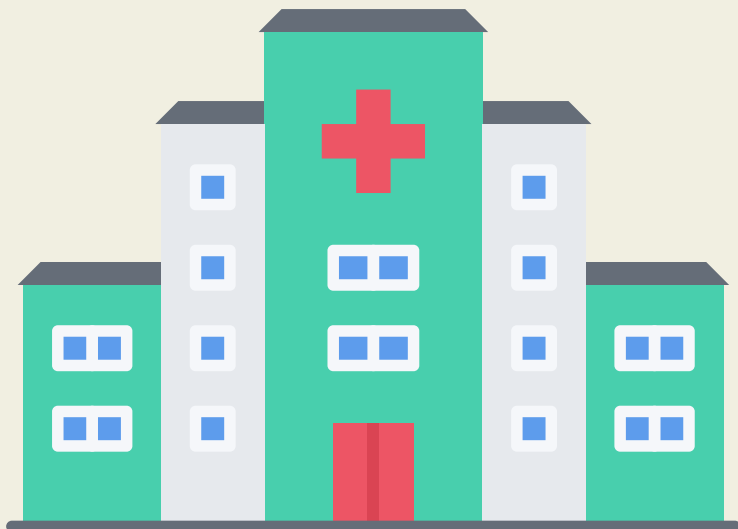
**18,000 VILLAGES
ELECTRIFIED AND 10
MILLION LIVES
IMPACTED THROUGH
TIMELY TREATMENT**

3

**EASILY REPLICABLE
AND INSTALLABLE
FOR SELF RELIANT
GENERATION OF
ELECTRICITY**



Beneficiaries



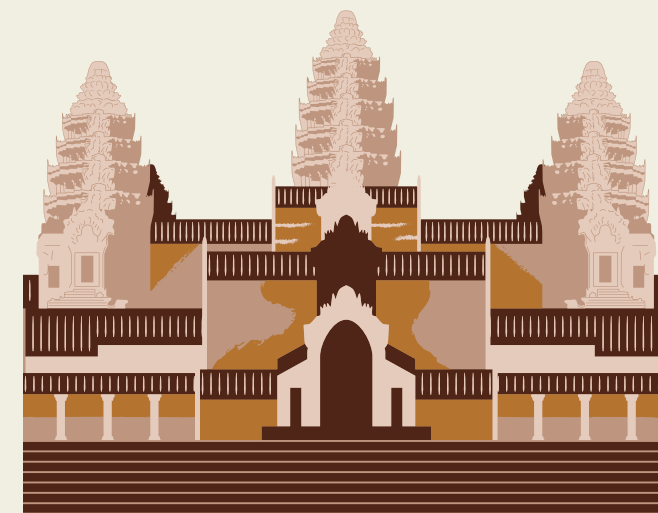
Hospital



Parks



Bus Stop



Temple



Fitness Center

ASSUMPTIONS-Hospital in Uttar Pradesh

| | | | | |
|-------------------------------------|--|------|-------------------|-----------------|
| Total Area | 800 sq. metres | | | |
| Area available for walking | 480 sq. metres | | | |
| Area covered by Piezoelectric discs | 384 sq. metres (80% of the 480 sq. metres) | | | |
| Total footfall (per day) | Staff | 150 | 10,000 steps each | 15,00,000 steps |
| | Non Staff | 3000 | 760 steps each | 22,80,000 steps |
| Energy per step(per day) | 0.06W | | | |
| Total Energy(per day) | 2,26,800W | | | |
| Units saved(per day) | 226kWh | | | |
| Total Amount saved(per day) | Rs.1814 | | | |
| Amount saved(per month) | Rs.54,420 | | | |
| Amount saved(per year) | Rs.6,53,040 | | | |
| Total Amount saved in 10 years | Rs.65,30,400 | | | |

The total cost of PIEZOELECTRIC MAT including Discs(480 sq. metres) Electrical insulating mat,Rectifier,Capacitor,Miscellaneous wiring,Customised Carpet,Electricity,Labour is estimated to be around Rs.12,62,750



R O A D M A P

Maintenance

Product will be maintained from time to time

Installation

Upon project completion, we will place our mat in a location we feel will demonstrate the energy harvesting proof of concept the best.

Scalable Production

Safety for pedestrians is our main concern.

Upgradation & Testing

It will help in sustainable development which is the need for the hour

Prototype

The mat will be connected to a rectifier to convert AC to DC and store it in a capacitor.

Ideation and Research

PiezoWalk is an energy harvesting floor mat. Idea is to convert renewable sources of energy into electricity.

