

[illegible]

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A glowing yellow lightbulb is positioned in the upper right quadrant of the image. The background is a light gray with a pattern of white circuit lines and small blue glowing nodes, suggesting a technological or digital theme. The word "INTRODUCTION" is written in a large, bold, black serif font across the center of the image.

INTRODUCTION

- A smart home is a home system that connects with the appliances to automate specific tasks and can be controlled remotely.
- Smart homes allows us to have greater control of our energy consumption, while automating things like adjusting temperature, turning lights on/off and many more applications.

An isometric illustration of a smart home environment. In the center is a house with a red roof and yellow walls. Surrounding the house are various smart appliances and devices: a washing machine, a microwave, a refrigerator, a laptop, a printer, a toaster, a digital clock, a computer monitor displaying a house icon, and a Wi-Fi router. Dashed white lines connect these devices, representing a network. A large, bold, black text "NEED FOR INNOVATION" is superimposed over the house.

NEED FOR INNOVATION

COMPELLING NEED

- Considering the daily emerging demand for power and the global climatic conditions there is a heavy requirement of a cleaner source of power before it is too late.

Sources of electricity are likely to deplete

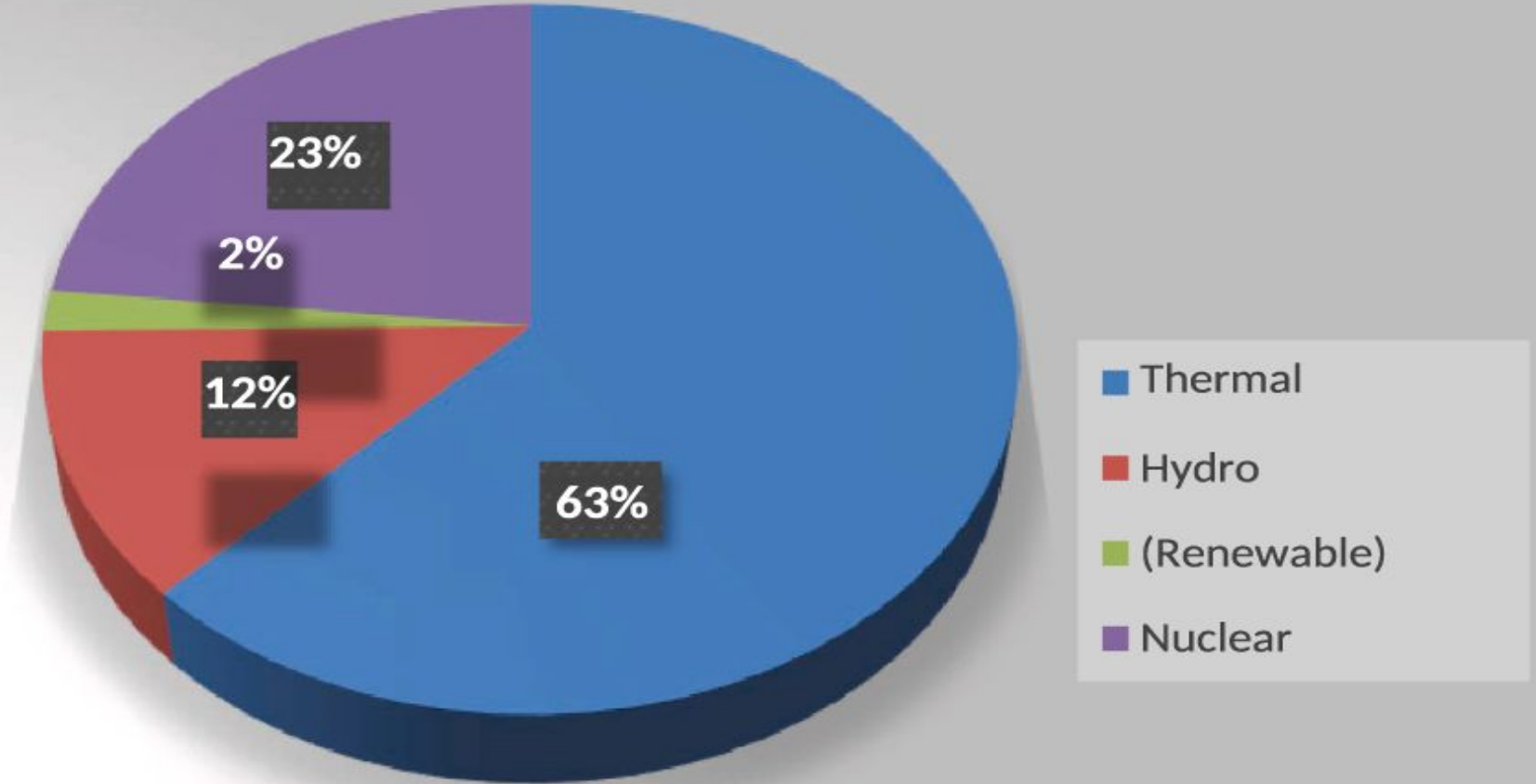
- By minimizing the use of natural energy resources, you are adding an edge to the natural greenery.



PAIN POINT

India's electricity sector is dominated by fossil fuels, in particular coal, which during 2018-19 fiscal year produced about three-quarters of the country's electricity.





A conceptual illustration of a smart home solution. A smartphone is shown with a wireframe house on its screen, connected by glowing lines to various smart home icons like a light bulb, door lock, and thermostat. The background is a soft blue with a faint 'SMART HOME' text.

SOLUTION

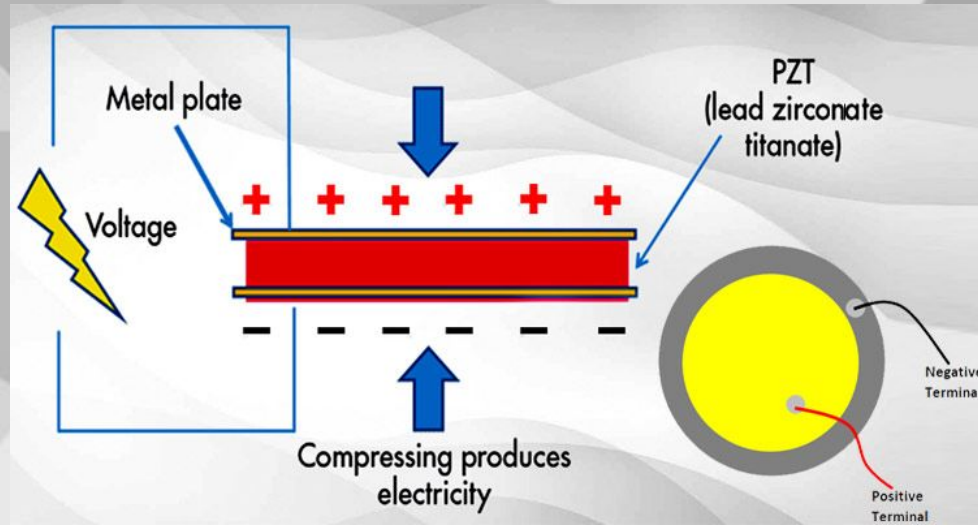
Our innovative solution demonstrated here,
can be divided into 2 modules :

1. POWER SUPPLY - PIEZOELECTRIC
GENERATOR (PIEZOELECTRIC TILES)
2. AUTOMATIC ROOM LIGHT AND FAN
CONTROLLER



WHAT IS PIEZOELECTRIC EFFECT ?

- Piezoelectric Effect is the ability of certain materials to generate an electric charge in response to applied mechanical stress.
- Some naturally piezoelectric occurring materials include Berlinite (structurally identical to quartz), cane sugar, quartz, Rochelle salt, topaz, tourmaline, and bone



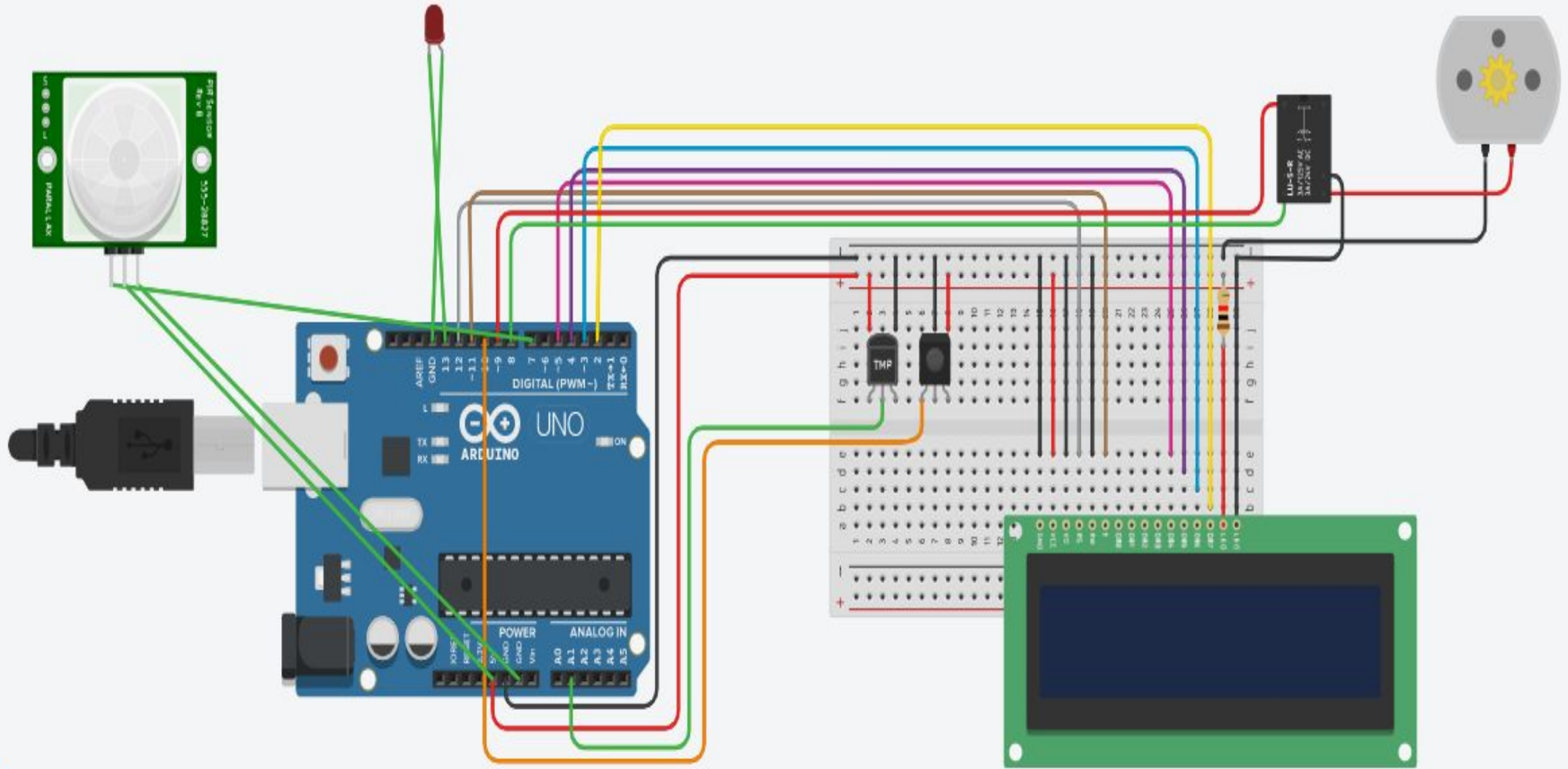


PIEZOELECTRIC TILES



- The piezo-electric tiles will be installed to generate maximum electricity - and will power the battery
- The automatic room light and fan controller is used to turn ON/OFF the respective appliance. When the number of people within the room is zero, the light and fan turns OFF.

CIRCUIT SCHEMATICS

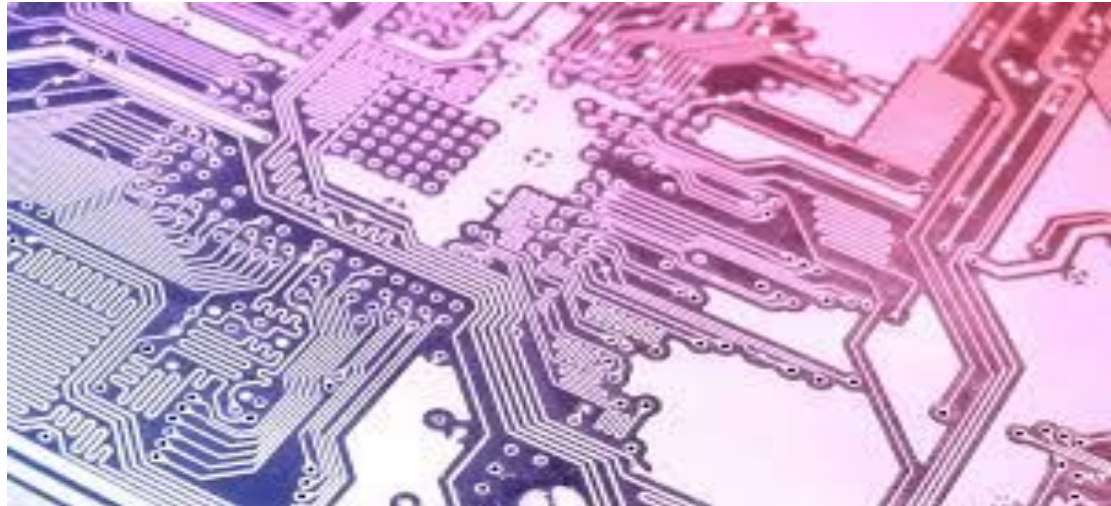


NOVELTY

1	Power capacity of one tube light in watt	40	40
2	Operational hours of corridor tube lights	12	3
3	Total consumption in watts per day	480	120
4	Number of days in a month	30	30
5	Total power used by one tube light in kw	14400W = 14.4 KW	3600W = 3.6 KW
6	Cost of electricity per kw in Rupees	4.5	4.5
7	Amount paid per month @ Rs. 4.50 per unit	64.8	16.2
8	Savings per month per 1 tube light in Rupees.		48.6


The speciality in this project is the idea of saving power upto 25 -30%.

The novelty of our prototype relies in the detection capabilities of the counters and crossing detectors with the application of PIR sensors,there by saving the produced electricity.



MARKETING STRATEGY

The background of the slide is a composite image. It features a blurred figure of a person in a business suit, likely a woman, in the upper half. In the lower half, there is a white bar chart with five bars of increasing height from left to right. The entire background is overlaid with a semi-transparent grid and some blurred currency notes, including a 100 Euro note.

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- The background features a stylized city skyline at the bottom with various buildings. Above the skyline, there are several icons: a bar chart with an upward arrow, a dollar sign, a small bar chart, and the word 'PROCESS' written in a stylized font. Three pendant lights hang from the top of the image.
- Printed materials for advertising (viz. pamphlets, handouts, etc.)
 - Knowledge transfer through educational institutions and conferences
 - Video outreach through programs telecasted via local and national channels (viz. advertisements)


- Open-house festival
- Digital marketing



RISK ASSESSMENT



- The power generated due by the piezo tiles is comparatively lower than other renewable sources.
- A stable internet connection is always required for an IoT to run.
- Piezoelectric crystals are temperature sensitive.
- Some crystals are water soluble and dissolve in a high humid environment.

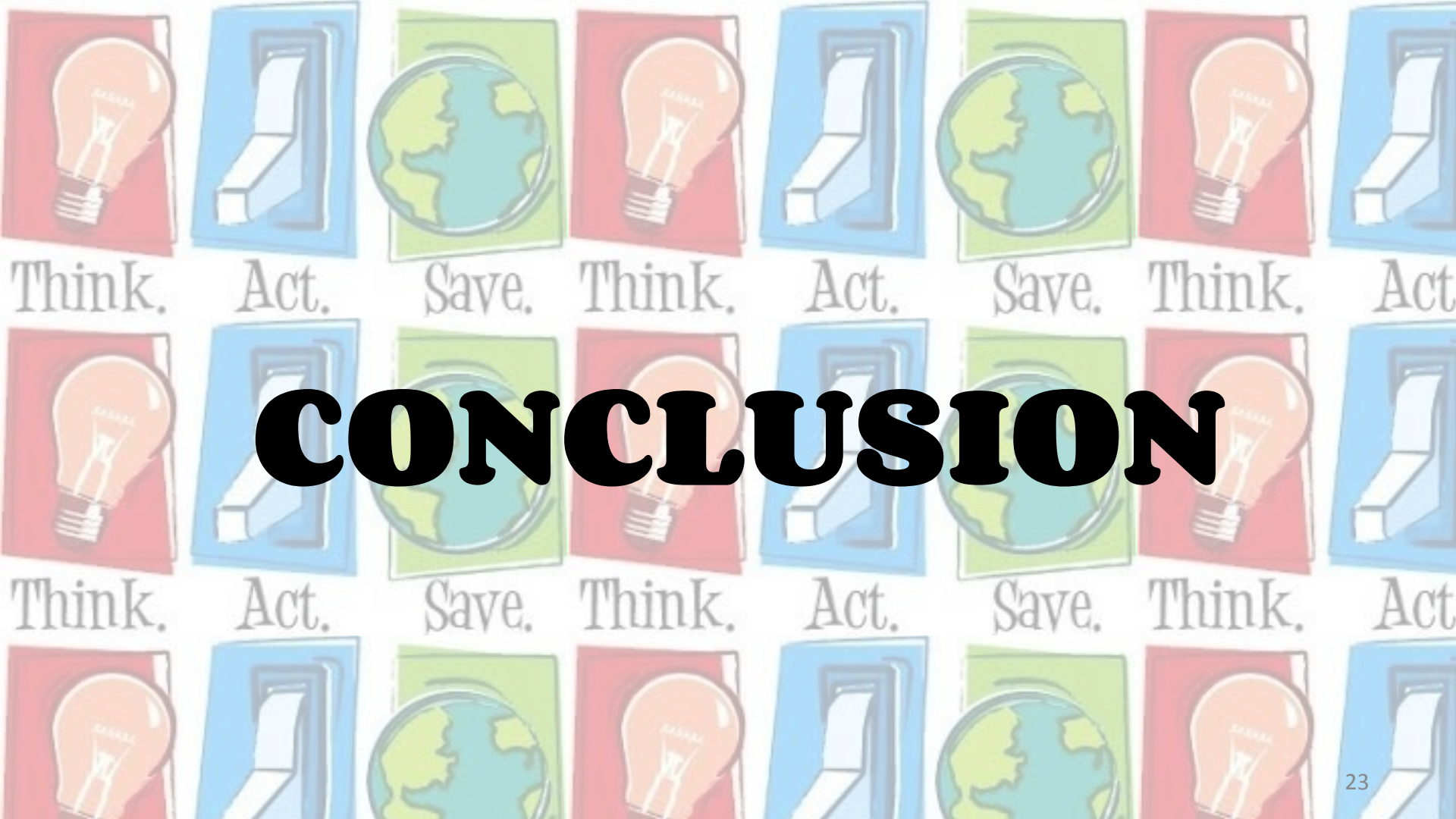


The image features a complex digital interface with a central circular gauge. The gauge has a blue glow and contains several segments, some of which are highlighted in a darker blue. Surrounding the gauge are various data readouts and icons. At the top left, there is a readout '6455, 65, 224, 2' next to a small icon. At the top right, there is a readout '4583, 16, 453' next to a similar icon. On the left side, there is a vertical readout '32' and a small icon. On the right side, there is a vertical readout '86' and a small icon. At the bottom left, there is a readout '11' and a small icon. At the bottom right, there is a readout '11' and a small icon. The background is a dark grid with a blue glow.

FUTURE ADVANCEMENTS



- An app can be developed for the overall control of the smart home.
- Solar power can also be used as an alternative.
- As a Safety unit a smoke sensor module can be installed.



CONCLUSION



Our manifestation of piezo electricity concept involves the use of mechanical stress. But the implementation of our prototype will remove the user's stress for paying electricity bill.



**Thank
You**