



Problem

In the cold winters and hot summers of Chicago, Illinois, electricity to heat a house is a necessity. With consistent increases in energy costs and high dependency on city energy usage, families living in low income neighborhoods like Englewood are faced with the challenge of choosing between living necessities, such as heating their home or buying food. As a result, they are frequently faced with poverty and homelessness.

Goals

- Lower energy costs in Englewood
- Decrease poverty driven by energy costs
- Find cost-effective yet environmentally conscious ways to lower energy prices

Englewood

- Population, 30,654
- Income per Capita: \$11,995 (City average is \$28,202)
- Poverty Level: 42.3%
- 3.1 mi², located on South Side of Chicago⁴

Three Possible Solutions

Solar Panels

- Ideal for buildings with slanted roofs
- High startup, but the opportunity to generate extra energy
- Programs and initiatives offer grants
- Produces up to 3,000 kWh/month on 1000 ft² roof with complete sunlight
- Average house uses 900 kWh/month¹
- Reduces dependency on city energy and fossil fuels



Green Rooftops

- Green rooftops entail planting vegetation on top of a flat roof
- Increased insulation
- Deflects sunlight in the summer
- Less dependency on city energy usage
- Increase in biodiversity
- Recycling of precipitation runoff
- \$10-25 per ft²



White Rooftops

- Feasible on flat-roofed houses
- White surfaces absorb less heat than darker surfaces
- Reduce summer energy use by up to 40%
- Reduces urban heat island affect
- Easy to "install"
- Costs \$6.00 per ft² with reflective paint



Conclusion

There is a wide variety of options for people to reduce their electricity costs through modifying their rooftops. Solar panels will pay for themselves and then begin to produce excess energy. White rooftops are a cheap way to save money on air conditioning costs during the summer. Rooftop gardens act as insulation and a space to grow food and other plants. Each of these solutions or a combination of them has the potential to work for anyone.

Implications

Using one or more of the methods listed, people can reduce the amount of electricity they use during the summer and winter months when usage is highest. By reducing the amount of electricity people have to purchase, they can spend the money on other necessities. This will be especially helpful in low income neighborhoods like Englewood, where the cost of electricity can lead to people choosing between electricity and other necessities such as food and schooling.

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References

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