

# ACTIVITY GUIDE



## FEEL THE POWER!

Carbon dioxide released from energy production contributes to climate change. Participants generate power to light a city building and experience the difference in energy efficiency between LED and incandescent bulbs.

### IN THIS KIT

- 2 Genecon hand crank generators
- 1 set of 5 LED holiday bulbs, wired together and connected via alligator clips
- 1 set of 5 incandescent holiday bulbs, wired together and connected via alligator clips
- 2 low-voltage buzzers
- Bulb information cards or backdrop
- Extra bulb sets in case of burnout
- Activity sign protected in plastic display

### BIG QUESTIONS

- Do different lightbulbs have different energy needs?
- How do incandescent & LED lightbulbs differ?
  - regarding energy needs?
  - regarding lifespan?
  - regarding cost?

### HOW TO SET UP

- 1)** Connect incandescent strand (if not already) by plugging into one hand crank generator. Turn the hand crank to see if bulbs will light up. If not, check all connections (alligator clips, plugs) to make sure they are secure.
- 2)** Connect LED strand (if not already) by plugging into the other hand crank generator. Check connections as above, if needed. *NOTE: if it is harder to crank the LED strand than the incandescent strand, something is wrong with the connections and the strand needs to be fixed/replaced. Please use a back-up strand and let us know about the problem!*
- 3)** Display the Try It! sign to encourage visitors to handle devices.

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## FACILITATION GUIDE

(This works best if children are directed to the activities, while caretakers are engaged in conversation and display information. This script is written for one visitor at a time but can be adapted for groups.)

- Hi! What do you think it would take to get these lights to light up?  
*(Hand over the incandescent lights/hand crank generator, and let visitor play with it until they light the bulbs)*
- So what did you notice? *(Listen to response)*
- We're interested in the energy it takes to light bulbs, because in Pennsylvania electricity generation accounts for nearly half of our CO2 emissions, meaning that it's a big source of one of the greenhouse gases trapping heat near the earth like a blanket. If we can use less energy, we can make that blanket a little less thick!
- Why don't you try this set of lights now. Look at the bulbs - notice anything different?  
*(Response time)*
- Given that, do you have any predictions about what might happen when you turn the crank? Why don't you try it?  
*(Hand over the LED lights/hand crank and let visitor try. They should notice the difference immediately)*
- Isn't it amazing how much less energy it takes to power that second set of bulbs? Those are called LEDs (light-emitting diodes). LED bulbs like this one *(point at display of standard bulbs)* are more expensive to buy up front, but over the life of the bulb are actually a lot cheaper than incandescents because they use so much less energy.

## FINISHED KIT



## ABOUT CUSP

CUSP helps urban communities explore climate impacts and solutions through active engagement with local examples.

