



Facilitation Guide

Resilient Energy Systems

How Does Our Energy System Function?

This facilitation guide is designed to initiate conversation, build on experienced knowledge, and develop collective community action as we consider the positive impacts from renewable energy sources. We hope that this workshop informs attendees of the various energy sources, and how energy reaches your home, and the communities in which we live, work, play, learn, and pray.

Materials Needed

Neighborhood Building Materials

- Medium-Large building blocks
- Railroad set
- Butcher paper (to be used for walls/neighborhood buildings)
- Cardboard boxes (to be coal plants) + empty toilet paper roll/paper towel roll (to be a pipe "stack")
- Black + yellow legos (to represent uranium and coal)
- Large flat legos (to be used as solar panels)
- Strings
- Large + small tripod(s) (to be transmission and distribution lines)

Additional Materials

- Energy Systems [photos](#) and [captions](#) (print)
- Paper
- Markers
- Tape

Facilitation Steps

A. Introduction: Who are we? Who's all here? Goals for today [10 min]

B. Energy use at home [15 min]

1. Pass out paper and markers to all participants. Have them write: Morning, Afternoon, Evening, and Late Night in different corners of their paper.
2. Next, encourage them to draw or write the names of the common appliances they use throughout the day in their respective corners (e.g draw a tea kettle under "Morning" because I use my electric kettle for a cup of tea in the morning). Have them circle appliances they use multiple times throughout the day.
3. Explain that this activity is to help visualize the various energy sources they use throughout the day and get them thinking about their overall energy usage. Use leading questions:
 - a. What is used out of habit or comfort, but maybe isn't necessary?
 - b. What is used out of necessity?
 - c. How do appliances get the energy they need to work for us?
4. Briefly go around the room and have participants share their most commonly used appliance and how they believe their appliances get their energy to work.

C. Building our neighborhood [25 min]

1. Gather participants all together and explain that they will be working together to create their neighborhood (or city) using building blocks. Encourage them to include their homes, their neighborhood businesses, parks, roads, and even industrial areas.
2. Pass out building blocks, to be used for the structure of their neighborhood, and butcher paper, to be used for walls or buildings. Allow ~10 for conversing and building.
3. Once the neighborhood has been created, pass out paper and markers to all participants. Instruct them to draw or write the answers to the following questions on their paper:
 - a. Who lives in your neighborhood?
 - b. Who works in your neighborhood?
 - c. Who plays in your neighborhood?
 - d. Who learns in your neighborhood?
 - e. Who prays in your neighborhood?
4. Reflecting on those questions, discuss the various ways energy may be used in their neighborhood. Reference their personal energy use from the first activity and prompt them to consider: what a buildings energy use may be, what a parks energy use may be, what a schools energy use may be, etc.

D. Energy sources [25 min]

1. Have participants grab a chair and make a large group circle around their built neighborhood. Reference the various homes, streets, parks, buildings, etc. that participants built. Prompt participants to consider *where* the energy circulating our homes, streets, parks, buildings, etc. comes from. Allow ~2 minutes for pondering.
2. Ask participants to share their thoughts aloud with the large group, there is more than one

right answer. Once they are done sharing, begin going into further detail [using the photo captions as needed] and noting energy sources they may have missed. They will be building the energy sources into their neighborhood. Utilize the energy systems photos to visually describe each energy source to support with their building:

a. Power Plants

1. Coal fired power plants are facilities that burn coal to make steam in order to generate electricity.
2. Instruct participants to build a coal plant using cardboard boxes and empty toilet paper rolls.

ii. Using guiding questions, encourage participants to consider the impact power plants have on their communities and the environment:

1. Who lives nearby?
2. Who works there?
3. Who owns the plant?
4. Who owns the land it is on?
5. What pollutants are emitted using this process to generate electricity?

b. Transmission Lines

1. Transmission lines, which consist of heavy cables strung between tall towers, carry power from where it is generated to areas where it is needed.
2. Instruct participants to build transmission lines using tripods and strings.

c. Mining

1. Coal and uranium are extracted from the earth through underground mining or surface mining; to produce electricity, coal or uranium are transported to plants and are burned. The steam produced runs generators and turbines.
2. Instruct participants to build coal/uranium mines using cardboard boxes and filling them with black and yellow legos; instruct participants to also build a railroad track leading from the mine to the coal plant (built previously) with the legos trailing along the tracks.

ii. Using guiding questions, encourage participants to consider the impact mining may have on their communities and the environment:

1. Who lives nearby?
2. Who works there?
3. Who owns the mines?
4. Who owns the land it is on?
5. What impacts does mining have on the environment?

Impacts of the current energy system

This entire system is built to get energy to our neighborhoods and cities, but comes with negative impacts to people and the environment. What could a just energy future look like?

E. Collective visioning around energy systems [15 min]

1. In the group circle around the neighborhood, encourage participants to take a moment to look at everything and really internalize this big picture snapshot of our energy system. Note the ways that everything is connected – from the mines all the way to our homes when we go to flick a light on or to turn on our electric kettles. Prompt them to imagine the extreme effort and power it took to create this system.
2. Using guiding questions, facilitate a collective reflection referencing the built neighborhood and energy system:
 - a. How much money and/or power goes into this system?
 - b. Will this system be able to last forever?
 - c. What if we replace all coal plants with a wind farm?
 - i. Wind farms are considered to be renewable energy sources, because their sources are “infinite”.
 - ii. Would this option solve the pollution problems that may be coming from other sources? What problems are still present?
 - d. Is this energy system working for our communities?
 - e. What could make our community less dependent on this current complex energy system?
 - f. Could we commit to using less energy and consider renewable ways to generate electricity at our homes or in our neighborhoods?
 - i. Introduce the concept of community solar: Various solar power installations whose generated electricity is shared by a community. Community solar is a way of reclaiming energy systems by promoting cooperative ownership and community-based control of energy resources.
 - ii. Utilize the solar panels photo for a visual description.
 - iii. Solar panels convert sunlight into electrical energy either through photovoltaic (PV) panels or through mirrors that concentrate solar radiation. This energy can be used to generate electricity.
 - iv. Instruct participants to put flat legos down in yards, parks, schools, etc. to represent solar panels.

A renewable energy future

We can collectively shift the control of energy resources and decision-making from the

corporate energy infrastructure into cooperative control. Moments like this are the first step as we collectively envision ways to democratize the energy system and push for a just transition [from a fossil-fuel economy] to a renewable energy economy, grounded in the economic and social needs of our neighborhoods.

F. Reflections & Closing [10 min]

1. Wrap-up; what did participants learn? What will they be sharing with community members? What remains unanswered?
2. Thank participants for their time and participation; we hope that they learned something new and are energized to continue conversations like today's.