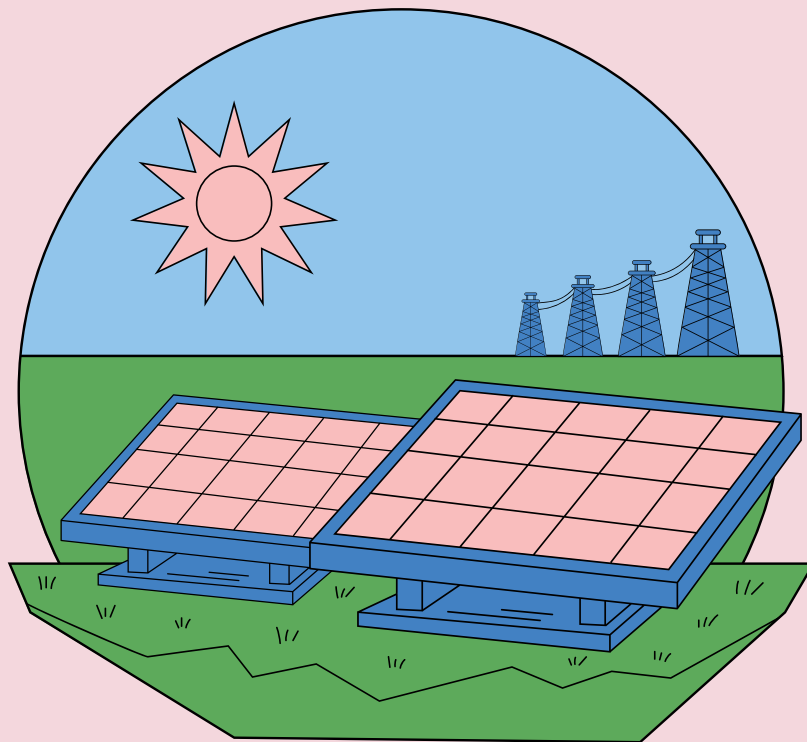


# EXERCISE 4 - CREATIVE SCENARIO FOR RENEWABLE ENERGY USE (45 MINUTES)



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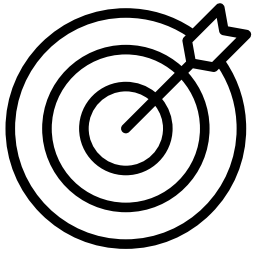


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## Goal of the exercise

The objective of this exercise is to develop creative scenarios for the application of renewable energy in specific contexts, such as urban infrastructure, agriculture, residential buildings, or smaller projects. Participants will analyze the benefits and challenges of implementing renewable energy and identify potential barriers and ways to overcome them.



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## Exercise 4 – Creative Scenario for Renewable Energy Use (45 minutes)



The trainer begins with a brief introduction on renewable energy technologies, such as solar panels, wind turbines, biomass, and geothermal energy. They explain that the purpose of the exercise is to design scenarios that creatively utilize these technologies in a selected context, e.g., in cities, agricultural areas, residential buildings, or other projects. The trainer also discusses the benefits of renewable energy—both environmental (CO<sub>2</sub> emission reduction) and economic (energy savings).

The trainer starts with a question to stimulate participants' thinking: "How can renewable energy be integrated into the infrastructure we see around us every day?"

### Trainer's Tasks:

- Divide participants into groups (3–5 people) and ask them to choose one context to focus on (e.g., urban infrastructure, agricultural farms, residential buildings, rural areas, etc.). Their task will be to develop a scenario in which renewable energy is creatively integrated with the chosen infrastructure. Participants should consider:
  - which renewable energy technologies will be used,
  - what environmental and economic benefits this solution will bring,
  - what barriers might be associated with implementing this scenario and what creative ways could be used to overcome them.

### Example Scenario Ideas:

- Installing solar panels on the roofs of public utility buildings,
- Integrating wind turbines with city street lighting,
- Using biomass energy on farms to generate power for machinery.

Monitor the groups' work, asking questions to stimulate creativity, such as: "What innovative technologies could increase the efficiency of your scenario?" or "Could your solution be implemented on a larger scale?"

After developing the scenarios, ask each group to analyze the feasibility of their idea. They should consider potential barriers, such as costs, technical issues, legal regulations, or lack of social acceptance.

Each group should also propose ways to overcome these barriers, for example, by applying new technologies, increasing social awareness, or using financial support programs.

## Supporting Questions:

- What costs could pose the greatest obstacle to realizing this project?
  - What educational or marketing initiatives could help gain community support for your idea?
- Ask each group to present their scenario. Participants should describe how they intend to creatively use renewable energy in the chosen context, what the environmental and economic benefits will be, and what potential barriers they encountered.
- Encourage other participants to ask questions and comment on the presentations. Ask them if they see potential for implementing these ideas in their environment or industry.
- If time allows, you can facilitate a discussion about the future of renewable energy in local communities, asking, for example: “Which of the presented scenarios has the greatest potential for large-scale implementation in Poland?”
- Summarize the main conclusions from the presentations and discussion, pointing out the key benefits of creatively using renewable energy in various contexts. Also, discuss the challenges one may face when implementing such projects and possible ways to address them.
- Encourage participants to reflect on how they can use their knowledge of renewable energy in daily life or work.
- Closing Question: “What renewable energy technologies do you consider most promising in the coming years and why?”
- To enrich the exercise, you can share examples of existing projects using renewable energy, such as “smart cities” powered by solar energy or farms using biogas.
- Encourage participants to think creatively—have them try to find unconventional yet practical ways to integrate renewable energy sources with urban and agricultural infrastructure.

## Examples of Existing Projects Using Renewable Energy:



### Freiburg im Breisgau – The “Green City” Powered by Solar Energy

Freiburg, Germany, is known as the “green city,” heavily investing in solar energy. The city promotes photovoltaic panels on public and private building rooftops and supports programs for constructing energy-efficient passive houses. Through these initiatives, Freiburg significantly reduces CO<sub>2</sub> emissions, setting an example of sustainable development for other cities.



### Biogas-Powered Farms – Denmark

In Denmark, many farms use biogas as an energy source. This process involves converting agricultural waste, such as manure and crop residues, into energy that powers the farms. This approach not only reduces farmers' energy costs but also cuts methane emissions and other pollutants. It is an example of how renewable energy sources can support sustainable agriculture.



### Malmö – The “Hybrid Wind-Solar Park”

In Malmö, Sweden, a hybrid park project combines wind and solar energy. This park supplies power to the city's buildings and infrastructure. Integrating multiple renewable sources increases energy efficiency and provides a stable energy supply, regardless of weather conditions.

