

# A PRACTICAL GUIDE TO CITIZEN SCIENCE FOR CITIZENS AND RESEARCHERS

## - The Citizen Perspective

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# What is citizen science?

## The short answer

Citizen science....

- describes a variety of ways in which the public participate in science
- means citizens are actively involved in research, in collaboration with scientists or professionals
- leads to a genuine outcome, such as new scientific knowledge, conservation action or policy change
- takes place in diverse fields: from ecology to astronomy, from medicine to history – and many more
- happens at different scales – from local projects to global ones, and from short projects to those happening over decades.

# What is citizen science?

## The long(er) answers

More detailed explanations can be found in:

- ECSA's [10 principles of citizen science](#), which are available in several languages
- ECSA's [Characteristics of citizen science](#)
- European Citizen Science Platform  
<https://eu-citizen.science/>



# Case study: Citizen science and Energy Communities

Energy communities is a citizen science initiative of the STEP-CHANGE project in Germany.

So far photovoltaic systems are only used to a small extent on multi-family dwellings, which make up about half of the German housing stock.

→ very high potential for the production of solar electricity remains untapped.



Sources/further information:

<https://stepchangeproject.eu/citizen-science-initiatives/energy-communities/>

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# Citizen science and Energy Communities

- What are the **(social) barriers and drivers** for involvement in tenant electricity models and how can we overcome these barriers and accelerate drivers?
- What **motivation** do citizen's scientists have in participating in energy sharing communities?

## Methods and tools:

- Energy consumption data will be collected with smart meters
- Living lab & questionnaires will be conducted



Sources/further information:

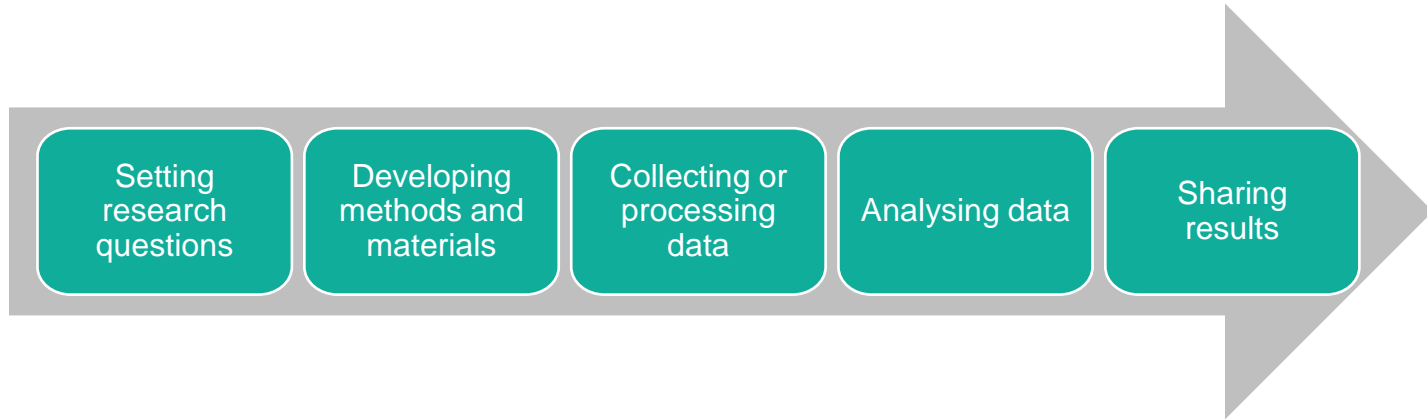
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# Citizen science related aspects



## CONTRIBUTORY

- Energy cooperative members
- Members of a housing cooperative / housing society
- 30 non-members (environmental, women's, youth org.)
- Min. 3 energy experts (SME, NGO, research institutes)

## COLLABORATIVE

- 6 energy cooperative board & supervisory members & employees
- Min. 3 partners that are energy experts (SME, NGOs)

# Citizen science added value

## Benefits for (energy) cooperative members and tenants

- Knowledge about their own energy consumption in real time
- Insights and 'training' on the topic and the work of cooperatives
- Personal and collective advancement of the energy transition

## Benefits for scientists

- more clarity about social barriers, drivers and involvement in tenant electricity projects and how to overcome barriers and accelerate drivers
- more clarity about interest in (and potential barriers and drivers of) different energy sharing scenarios

## Benefits for (energy) cooperatives

- Insight into attitudes and behaviour of their members
- Stronger bond with members and ideas to improve the engagement of members
- Smart meter for members
- Active citizen scientists could initiate and advance further projects
- How to improve engagement with different stakeholders
- Stronger advocacy work possible with results
- Increasing acceptance of the energy transition

# Empowering citizens

Citizen science empowers citizens through:

- increased **understanding** of science and scientific processes
- opportunities to steer research towards the **issues that matter** to them and their communities
- the chance to **get involved** at every step of the research process.

There are increasing efforts to make citizen science more inclusive:

- to reach **marginalised and vulnerable groups**
- Empowerment, Inclusiveness & Equity Working Group works on this.



Photo: pixabay.com



# Motivating citizen scientists

Motivation is central to all citizen science projects. Volunteers need to be motivated to:

- start a project
- join a project
- continue with a project.

Other actors also need to be motivated to get involved: scientists, policy-makers, etc.

Motivation in citizen science is widely studied; a useful summary is provided by Scivil in [Veeckman, C. et al. \(2019\)](#) (pp.17-18)

Why do people get involved in citizen science?	
Using self-determination theory we can identify five different types of motivation in citizen science. Collective motivations and intrinsic motivations have the biggest impact on participation.	
Collective motivation	The citizen scientist sees the project aims as important.
Norm-related motivation	The participant hopes for positive responses from friends, family or work-mates.
Motivation based on reward / extrinsic motivation	Participation brings real benefits, such as building a reputation or making new friends.
Collective identification	The participant identifies with the group, its norms and its values.
Hedonistic / intrinsic motivation	Participation in the project gives pleasure.

Source: Classification of types of motivation for participation in citizen science, according to Nov, Arazy & Anderson (21)

# ECSA - what do we do?

ECSA is a membership association that aims to:

- encourage the growth of the citizen science movement in Europe and beyond
- enhance public participation in scientific processes
- support citizen science through various projects
- undertake research on citizen science
- several working groups
- workshops, events, and biannual citizen science conference



eu-citizen.science



**Step Change**



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Youth Citizen Science



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CITIZEN SCIENCE HUBS



**COESO**  
connecting research and society



**D-NOSES**  
Distributed Network for Odour Sensing,  
Empowerment and Sustainability



**Cos4Cloud**



# THANK YOU!

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