



# **A Handbook of Energy Justice for Energy Cooperatives**

BETA

by Chia-Yu, Lin

for the master thesis project  
"Designing a just business model for citizen-  
owned energy cooperatives"

## The goal of the handbook

Could we achieve environmental and social sustainability simultaneously? The answer is a resounding “YES!” Energy cooperatives are the heroes driving the shift towards renewable energy and bringing communities together through local initiatives. But many of these heroes are grappling with the challenge of understanding the needs of vulnerable groups, recognizing the untapped social potential in their current practices, and crafting an action plan for changes.

This handbook is here to assist energy cooperatives in playing their part in creating a fair transition towards cleaner energy. By combining energy justice framework, business model innovation, and design thinking tools, the handbook helps energy cooperatives reveal how their practice affect energy fairness and use tools to make their approach better match their social goals. Together, we can make a successful business also a fair one!

## Who are the handbook for

- ① Initiators and boards of energy cooperatives
- ② Designers and consultants facilitating just energy transition
- ③ General publics who are interested in a fairer future energy

## When to use the handbook

- ① Initiating a new energy cooperative
- ② Evaluating and reinventing the existing energy cooperative

## What is the expected outcome

to gain a better grasp of how your energy cooperative’s business model impacts energy (in)justice and to discover ways to adjust the model in order to achieve your social objectives in a just energy transition.



## Reading guide

The handbook is divided into three sections: context, exercise, and resources. In the context section, you'll find an explanation of the relevance of energy justice and its three important pillars. The exercises section introduces four hands-on activities to help you assess your energy cooperative and brainstorm ways to make it fairer. The resources section provides extra tools to support the exercises. The Case Cards showcase examples to illustrate the concepts in action. By blending theory with practical cases, the handbook encourages you to roll up your sleeves and start reshaping your energy cooperative!

## CONTEXT



Why does energy justice matter?

The energy justice framework

Energy cooperatives for a just energy transition

## EXERCISE



Who are our members and stakeholders?

What is our business model?

Where do the injustices reside?

How do we make our business more just?

## RESOURCE



Extra tools

Templates for exercise 1 & 3

## THE CASE CARD



Energy justice: insights from Bijlmer Centrum

Exercise 1 case card

Exercise 3 case card

## Why does energy justice matter?

The concept of energy justice plays a pivotal role in the overarching just transition towards a low-carbon regenerative economy. This transition signifies a departure from the prevailing extractive economy that relies on the depletion of natural resources, which has perpetuated pervasive inequalities. Aligned with the movements for environmental justice and climate justice, energy justice strives to ensure equitable access to safe, affordable, and sustainable energy for all individuals, regardless of their social background and geographical location.

Carley and Konisky characterize a just energy transition as a scenario in which

- ① affordable, dependable, and clean energy services are accessible to all
- ② active participation in decision-making related to energy system transformations is open to all
- ③ there is acknowledgment of the challenges associated with energy poverty and disparities in opportunities within the transition process

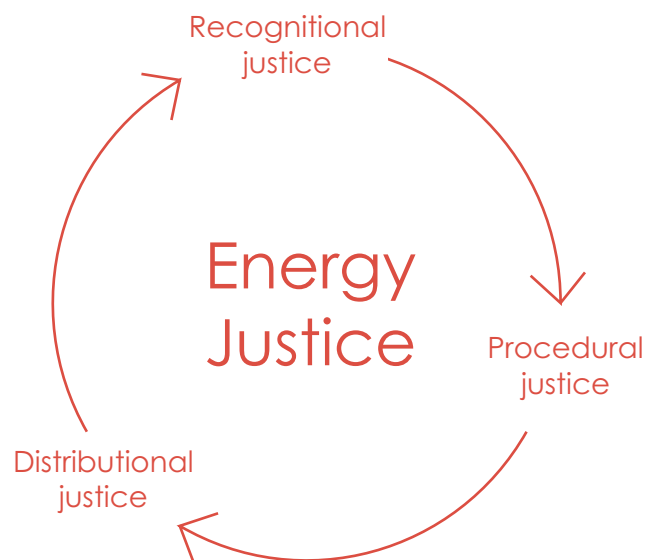
***“Almost half of all Dutch households (48 %) cannot participate in the energy transition in the built environment on their own.”***

*-Mulder et al., 2023*

The energy justice framework serves as a critical tool for assessing whether the transition from an extractive economy to a low-carbon regenerative one truly embodies justice or unintentionally upholds injustices inherited from the previous system.

# The energy justice framework

The energy justice framework includes three key aspects of justice: recognition, procedures, and distribution. These aspects are interconnected and interdependent, so addressing them effectively requires a comprehensive approach.



## Recognitional justice

*Recognitional justice* concerns the acknowledgment and respect for the inherent differences among individuals and social groups, without employing these differences as a basis for discrimination or ask the minorities to assimilate to mainstream standard.

For instance, a common stereotype about the “energy poor” is that they use energy inefficiently due to a lack of knowledge. However, some groups, like the elderly and infirm, set their heaters to higher temperatures out of health and comfort needs. Therefore, it’s crucial to understand the motivations behind the energy consumption patterns of the vulnerable groups before encouraging behavior changes.

In a survey conduct with 71 energy communities across Europe, Hanke et al. (2021) uncovered that 36% of them do not address energy poverty due to the topic never having been discussed within their organizations. Some respondents suggested that the

absence of vulnerable groups in energy communities was because these groups “do not want to participate”, “lack interest in such topics” or that a “minimum share price of €500 is low enough to facilitate universal participation”. These observations make the lack of recognition evident.





## Procedural justice

*Procedural justice* seeks to establish fair decision-making processes that allow all stakeholders to participate without discrimination and ensure the equitable representation of different groups.

However, this principle faces challenges in practice. For instance, Hanke et al. (2021) discovered that in Germany, 83.3% of energy community boards are exclusively occupied by men, with an average of only 16.2% female members. Additionally, financial barriers often prevent vulnerable groups from participating in energy cooperatives, as these cooperatives rely on members' financial contributions to invest in energy assets. When vulnerable groups are excluded from the decision-making process, cooperatives may struggle to recognize their unique needs and come up with procedures to engage with them.

Nevertheless, there are successful approaches to overcoming these financial barriers and promoting diversity among cooperative members. For instance, on the Danish Island of Aero, an energy cooperative has partnered with a local bank to provide zero-interest loans to finance vulnerable households' membership.

**“Vulnerable households face a set of economic, social and individual participatory prerequisites. As a result, they are often excluded from participating or exclude themselves from participating.”**

-Hanke et al., 2021

## Distributional justice

*Distributional justice* revolves around the impartial allocation of benefits and burdens across society, irrespective of factors such as social class, gender, ethnicity, and other differences.

Currently, although financial benefits are fairly distributed, most energy cooperatives consist of individuals with higher financial means. This hints at a broader concern: the distribution of benefits from energy transition remains concentrated within specific societal groups. Furthermore, the non-financial benefits, such as social networks, knowledge-sharing, and positive environmental impacts, are frequently neglected and not evenly distributed.



# Energy cooperatives for a just energy transition

An energy cooperative is a community-owned organization focused on renewable energy. Members collectively manage and benefit from projects like solar panels or wind turbines, promoting sustainability and local involvement in clean energy production.

## Importance of energy cooperatives in energy transition

Energy cooperatives play a crucial role in accelerating the energy transition for several reasons. Firstly, they accelerate the installation and production of renewable energy by leveraging collective actions. By pooling resources and efforts, energy cooperatives can lower the costs of renewable energy technologies, making them more accessible and affordable. Secondly, energy cooperatives facilitate citizen participation in local energy policy. They provide a platform for individuals and communities to actively engage in decision-making processes related to energy production and distribution. Thirdly, energy cooperatives have the potential to improve local economy. Success stories can be found in Danish islands like Samsø and Ærø, where energy cooperatives have not only contributed to sustainable energy development but have also provided economic benefits for the local communities.

By harnessing renewable energy resources and involving local residents as stakeholders, energy cooperatives can empower more ownership for citizen in the energy sector and create social, economical, and environmental progresses for the society as a whole.

## Injustices within energy cooperatives

Energy cooperatives, with their citizen ownership and governance, hold significant potential to drive renewable energy adoption and promote social progress. However, they may still face challenges in achieving a truly just energy transition. Hanke et al. (2021) conducted a comprehensive online survey involving 71 renewable energy communities across the European Union, revealing several prevalent injustices within these energy communities. For instance:

**83%** boards are exclusively occupied by male members in German energy communities

**545€** is the average minimum financial participation per member in Germany

**36%** of the energy communities don't address energy poverty because "the topic has never been discussed"



Could we build a more just  
energy cooperative?

**Let's reimagine how the  
business is designed.**

EXERCISE



## Exercise guide

The Exercise section comprises four activities designed to assist you in gaining a comprehensive understanding of your members and business model, thereby addressing potential injustices within the energy cooperative. Each cooperative is unique in its development stage, so you can choose the exercise that best suits your current situation. For instance, if you already have

a good grasp of your members, stakeholders, and business model, you can jump directly to Exercise 3, which focuses on identifying injustices. Take a look at the key questions for each exercise below and start with the unanswered questions that you aim to tackle.

Exercise 1



Who are our members and stakeholders?

Who are our core members and secondary stakeholders?  
What are the living condition of our members?  
What are the frustrations and goals of our members?

What is our business model?



Exercise 2

How does our energy cooperative work?  
What are the key elements of our business model?  
How do the elements effect each other?

→ **Start with exercise 2** if you already have understandings of your members & stakeholders

Exercise 3



Where do the injustices reside?

What do we do well in energy justice currently?  
Which part of our business model may contribute to injustices?  
What are the indicators of injustice?

→ **Start with exercise 3** if you already have business model of the cooperative

How do we make our business more just?



Exercise 4

What ideas do we have to remove the injustices in our energy cooperative?  
How does incorporating the ideas reflect on our business model?

→ **Start with exercise 4** if you already identify injustices in the business model of the cooperative

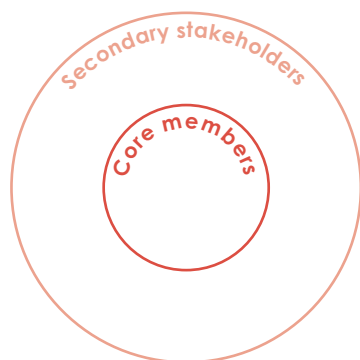
KEY QUESTIONS

# First, get to know our members better

The main aim of a cooperative is to meet the goals of its members, whether they are economic or social. To start, write down what you know about your core members and who are our secondary stakeholders. If you're unsure about certain aspects, don't hesitate to reach out and ask your members.

## Exercise 1 Who are our members and stakeholders?

### ① Identify our core members and secondary stakeholders



#### Core members

the primary audience we aim to serve in our energy cooperative, or those who derive the greatest benefits from our existing cooperative.

#### Secondary stakeholders

the individuals, communities, local businesses, and even the surrounding environment that are impacted by the energy cooperative. It's crucial to consider their interests when distributing the benefits.

❓ Are we serving the vulnerable group? If not, why?

### ② Persona: recognizing members' conditions and needs



#### Demographics

What are the core member's age group, culture background, education level, etc?



#### Living condition

What kind of house are they live in? Are they living with others? What are their energy related behaviors and needs?



#### Prosumer or consumer

Is the core member prosumer or consumer?



#### Frustrations and goals

What are the problems the core member encounter and what are the goals they want to achieve?

❓ Are the purposes of our energy cooperative align with the goals of our members?

Want an example? Check out the case card!

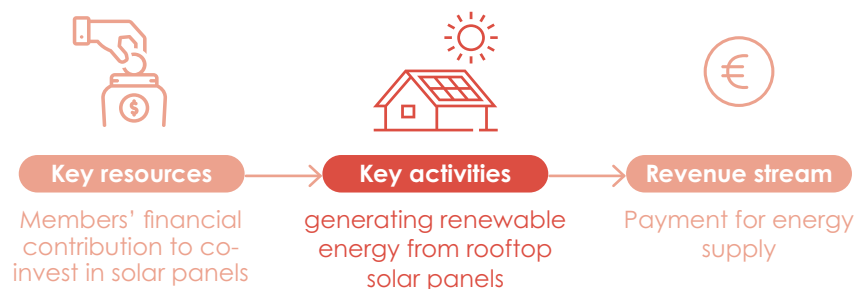
## Second, map out our cooperative's business model

A business model is the blueprint of how an organization creates, delivers, and captures value. It encompasses both the technological applications and the socio-economic dynamics that govern its operations. In this step, we will map out the key elements of your energy cooperative's business model and understand how they work together.

### Exercise 2 What is our business model?

#### ① Map out the key elements and the connections

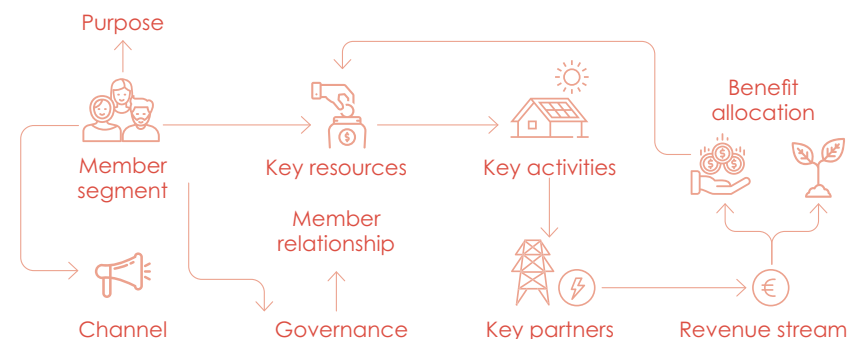
There are ten fundamental elements of an energy cooperative's business model. To start, outline the parts that you're already certain about. For example, if one of the key activities of your energy cooperative is "generating renewable energy from rooftop solar panels," you can then expand to identify the key resources needed for this, as well as the revenue streams stemming from these activities. Keep going until you've mapped out all ten elements and how they connect.



### 10 elements of an energy cooperative's business model

- |   |   |
|---|---|
| ① <b>Purpose</b><br>the value why a cooperative exist   | the activities a cooperative carry out to serve its members and fulfill its purpose   |
| ② <b>Member segment</b><br>the different groups of people a cooperative aims to serve             | ⑦ <b>Key resources</b><br>the important things required to conduct the key activities   |
| ③ <b>Channel</b><br>how a cooperative reach out to and communicate with potential members         | ⑧ <b>Key partners</b><br>the supplier, trader, or other entities that ensure the business model works                           |
| ④ <b>Member relationship</b><br>how a cooperative maintain the relationship with existing members | ⑨ <b>Revenue stream</b><br>the revenue the cooperative generate from the key activities   |
| ⑤ <b>Governance</b><br>how a cooperative make decisions with what kind of body                    | ⑩ <b>Benefit allocation</b><br>the way the cooperative redistributes its revenue and non-financial benefits to the stakeholders |
| ⑥ <b>Key activities</b>   |   |

In the end, you will have a business model map like the image below. Want a detailed example? Check out the case card of exercise 3.



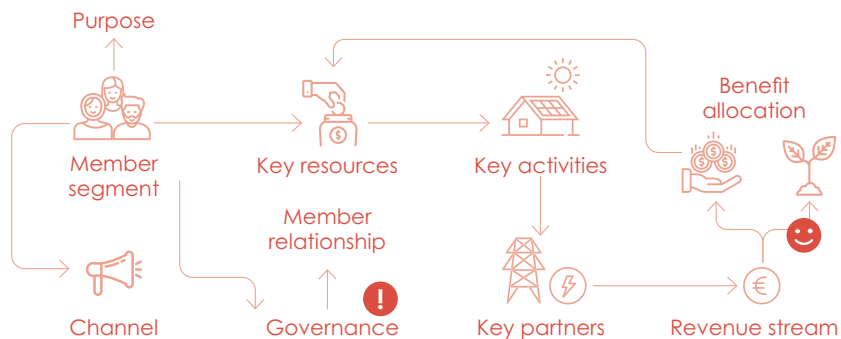
## Third, take a closer look for any injustices

Great job! Now that we have a clear blueprint of our business model, it's time to examine it closely and check if there are any aspects that might not align with the three principles of energy justice.

### Exercise 3 Where do the injustices reside?

### ① Identify the (in)justices in the business model

Using the business model from exercise 2 as a foundation, let's explore if any injustices exist. For example, in the "governance" aspect, we may hold regular online member meetings on weekday mornings. However, this schedule might exclude elderly members unfamiliar with digital tools and those who work during those hours, potentially leading to procedural injustice. Conversely, we could allocate some earnings to support local environmental projects, promoting more equitable benefits distribution, including environmental benefits, and addressing distributional justice.



## Indicators for energy justices

If you're unsure about other examples of (in)justices, you can refer to a list of energy justice indicators developed by Hanke et al. (2021). Each indicator is relevant to different aspects of the business model. For instance, you can assess the "member diversity" indicator by examining the composition of the "member segment" within the business model.

Recognition justice	Procedural justice	Distributional justice
<p>Level of knowledge about energy poverty</p> <p>Governance</p>	<p>Overcoming barriers for participation by:</p> <p>Reduced membership fees</p> <p>Member segment</p> <p>Key resources</p>	<p>Member diversity</p> <p>Member segment</p>
<p>Level of knowledge about preferences, needs and living situation of energy poor households</p> <p>Governance</p>	<p>Targeted information &amp; engagement activities</p> <p>Channel</p>	<p>Energy efficiency services targeted at vulnerable groups</p> <p>Key activities</p> <p>Benefit allocation</p>
<p>Engagement with energy poor households</p> <p>Channel</p> <p>Member relationship</p>	<p>Lower share prices for vulnerable groups</p> <p>Benefit allocation</p>	<p>Lower energy tariffs for vulnerable groups</p> <p>Benefit allocation</p>
<p>Addressing energy poverty in the organizational statutes</p> <p>Purpose</p>		

**?** Energy (in)justices can be context-specific and may differ from one cooperative to another. It's crucial to put yourself in the shoes of your members and stakeholders and gain an understanding of what they perceive as (in)justices.

Want an example? Check out the case card!

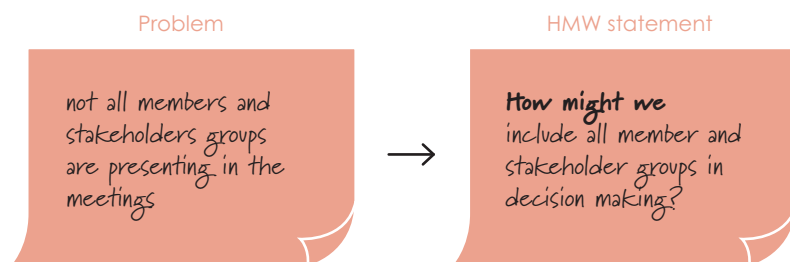
# Ready? Let's brainstorm what we can do differently

Realizing there are injustices in your energy cooperative's business model might feel a bit discouraging at first, but it's actually a crucial starting point for unlocking its full social potential! Now, let's not dwell on these as mere "problems." Instead, we'll reframe them as potential "opportunities" and brainstorm ideas to change the key elements of your business model.

## Exercise 4 How do we make our business more just?

### ① How might we...?

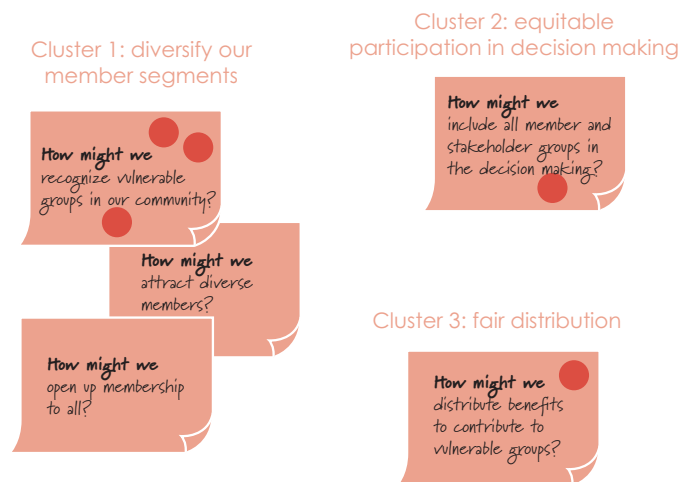
Review the injustices you've found in exercise 3, and let's reframe them into "How might we" statements. For instance, if you've identified a procedural injustice in the "governance" aspect, like "not all members and stakeholders groups are presenting in the meetings," let's turn it into an opportunity with a statement like "How might we include all member and stakeholder groups in decision-making?"



Take five minutes to individually write down at least three "How might we" (HMW) statements. Then, post them on the wall for everyone in the group to see. Feel free to build upon each other's ideas to create your HMW statements.

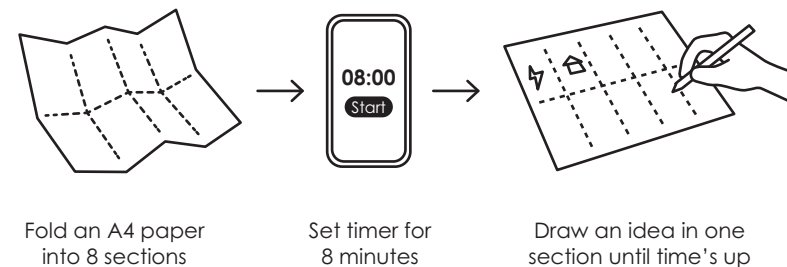
### ② Clustering & dot-voting HMW statements

If there are a lot of HMW statements, we'll begin by clustering them and consolidating overlapping ones to make the process more manageable. Afterward, each participant will be given dots to vote on the HMW statements they believe are the most important. In the end, there will be 1-3 chosen HMW statements.



### ③ Crazy 8's: idea generation

Now, we use Crazy 8's to generate ideas for the chosen HMW statements. Crazy 8's is a rapid sketching method that each person draws eight different ideas in eight minutes. The focus is on quantity, not perfection, so wild and imaginative ideas are encouraged. Remember, there's no need for the ideas to be perfect or practical – sometimes the wildest ideas can lead to unexpected innovations.

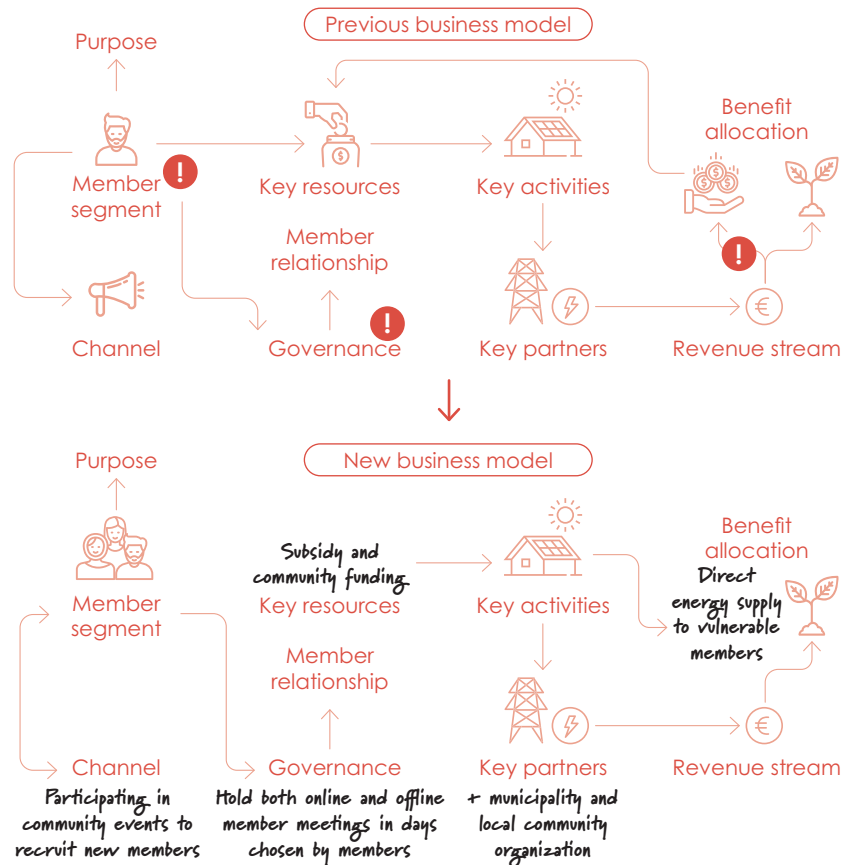


#### 4 Presenting & dot-voting Crazy 8's ideas

Everyone takes turns presenting their ideas, and following these presentations, conduct a round of silent dot voting to select the most favored ideas.

#### 5 Revisiting the business model

Examine the outcomes of exercise 3 and slot the chosen ideas into their relevant spots within the business model. Then, sit down with your group and discuss the revamped business model. Discuss questions like: How has the business model evolved? Is it actually tackling the injustices we set out to address? What practical steps can be taken to ensure the changes to the business model are viable? Finally, wrap up the business model with your last thoughts.



End of exercises

The exercises are completed, but the journey continues from here...

Great job on completing the exercises! Now, with a master plan in hand to improve your energy cooperative, the next step is turning these ideas into reality. The path to realization may differ from one cooperative to another, but here are some actionable steps you can consider taking to bring your plan to life:



Share the business model and proposed injustice mitigation ideas with members and stakeholders, seeking their feedback



Make rapid prototypes to test the acceptance of the new business model



Create a roadmap outlining short-term, mid-term, and long-term implementation goals



Create detailed metrics of what does that mean to be successful in each goal

## RESOURCES





### Home visiting

Visiting people in their homes can offer valuable, often unspoken insights into their living conditions. For instance, even homes with the same energy label may have varying levels of comfort due to factors like humidity and inadequate ventilation, which residents might not be aware of themselves.

However, gaining access to people's homes, especially for vulnerable groups, can be challenging. To overcome this hurdle, you can collaborate with local community organizations. For instance, the Quick Fix Brigade program at Groene Hub in Amsterdam Zuidoost conducts home visits to provide energy efficiency services. Energy cooperatives can reach out to these organizations to request permission to join these home visits, gaining a more real-world understanding of the needs of vulnerable groups.



Learn more  
about field  
research:



### Community event

To connect with a diverse group of local residents, it's crucial not to rely solely on existing member networks or digital platforms, as they may exclude some community members. Attending local events can provide valuable insights into the neighborhood's makeup, residents' interests, and communication preferences.

Your level of involvement at these events should align with your agreement with the event organizer. You can choose to participate as an observer to understand the community dynamics. If the organizer allows you to promote your cooperative, consider preparing materials that can kickstart conversations. These materials can help you engage with residents and gain insights into their thoughts and concerns about energy. Rather than directly asking what they expect from your energy cooperative, focus on building connections and having meaningful discussions since their needs might not be immediately clear.

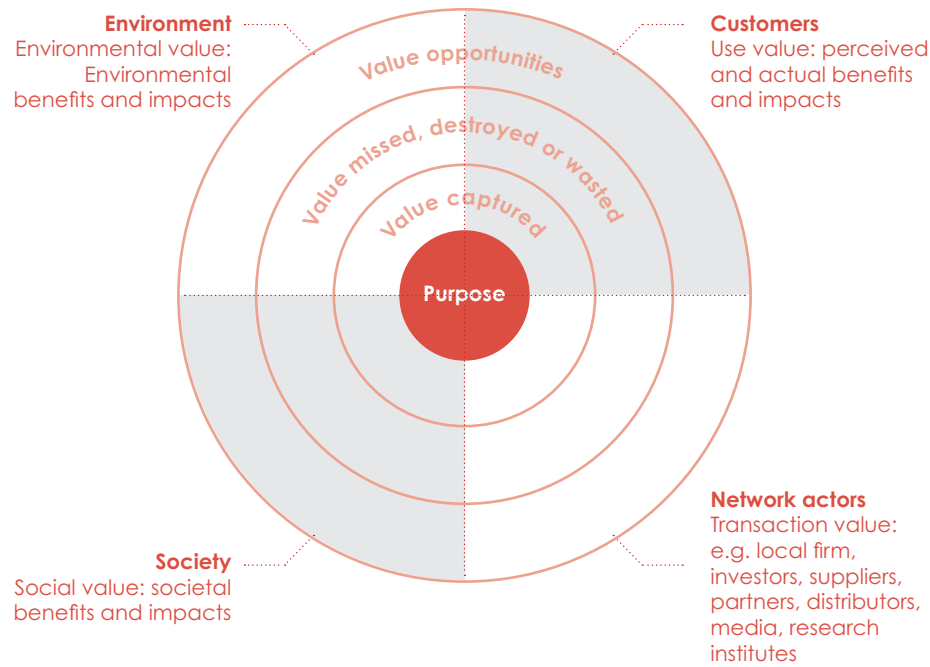
### Survey

Conducting regular surveys can be a valuable tool to gather quantitative insights and stay in tune with your members' preferences. To ensure inclusivity, use both online and offline formats for the survey, as this helps overcome potential barriers related to digital literacy. When creating the survey, steer clear of jargon to make it accessible to everyone, and aim for a completion time of under 10 minutes.

If possible, consider including demographic questions on the survey, covering aspects like gender, age, migration background, income level, and more. This data can provide a better understanding of member diversity within your cooperative and aid in assessing your progress towards procedural justice.

A value mapping tool by Bocken et al.

The Value Mapping Tool is divided into four quadrants, each representing different types of stakeholders. Its strength lies in encouraging users to look beyond the immediate beneficiaries of the cooperative and get a complete picture of all the stakeholders that might be affected by it. In the context of energy cooperatives, you could replace “Customers” with “Members.” The tool prompts you to think about the value you currently provide, what you might be missing, and potential opportunities to create value for each stakeholder. This helps cooperatives better understand their impact on each stakeholder and find ways to provide more value in the future.



The Business Model Canvas by Osterwalder & Pigneur

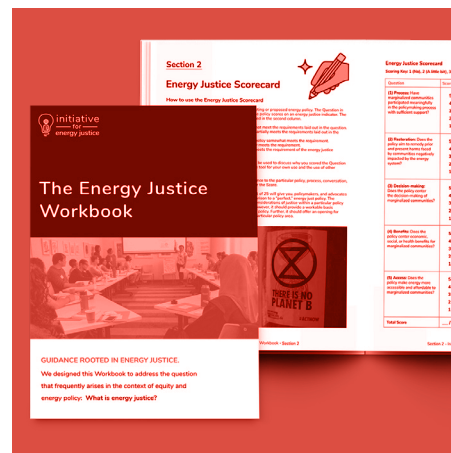
The Business Model Canvas is a useful communication tool for developing a shared understanding of a company’s business model. It comprises nine essential building blocks: key partners, key activities, key resources, value propositions, customer relationships, channels, customer segments, cost structure, and revenue streams. While the Business Model Canvas is a good starting point for comprehending your business, it’s important to note that it primarily focuses on explaining “how a company intends to make money” (Osterwalder & Pigneur, 2010). Often, it doesn’t give equal weight to non-financial values and the impact of governance.

Key partners	Key activities	Value propositions	Customer relationships	Customer segments
	Key resources		Channels	
Cost structure			Revenue streams	

## The Energy Justice Workbook and Justice in 100 Scorecard by Initiative for Energy Justice

The Workbook is a tool for equity-centered energy policy making. It can assist in the governance and policy-making aspects of your energy cooperative.

One valuable component of the Workbook is The Scorecard, designed to aid individuals involved in the energy transition in evaluating whether a policy aligns with energy justice principles, particularly procedural and distributive justice. The Scorecard encompasses five energy justice indicators: 1) Process, 2) Restoration, 3) Decision-making, 4) Benefits, and 5) Access. For more detailed metrics for each indicator, you can refer to the Justice in 100 Scorecard. It's important to note that these workbooks and scorecards were developed in the US context and may require adaptation to fit the EU context and the specific circumstances of your energy cooperative.



Download The Energy Justice Workbook:



## About the author and the research behind the handbook

Hello! I'm Chia-Yu Lin, currently pursuing a master's degree in Strategic Product Design at Delft University of Technology (TU Delft) in the Netherlands. This handbook is part of my thesis project: Designing a just business model for citizen-owned energy cooperatives. The thesis project is part of the Local Inclusive Future Energy project, a collaborative initiative involving TU Delft, AMS Institute, and the municipality of Amsterdam.

I want to express my sincere gratitude to my supervisory team, including Abhigyan Singh (Chair), Sander Mulder (Mentor), and Hans Roeland Poolman (Company supervisor), for their invaluable guidance and support. The field research that greatly contributed to this project wouldn't have been possible without the generous help of Joseph, Emeka, and Juan from the Quick Fix Brigade at Groene Hub. In conducting my research and designing this handbook, I drew upon established methodologies, including the research of

energy justice by Hanke et al. and McCauley et al., the business model canvas framework developed by Osterwalder & Pigneur, and the principles of Google Design Sprints by Google Ventures.

If you have any inquiries or require further information, please don't hesitate to reach out. I hope this handbook will be a helpful companion as you strive for a fair energy transition.

Sincerely,  
Chia

A Handbook of Energy Justice for  
Energy Cooperatives (Beta)

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# Energy justice: insights from Bijlmer Centrum

Located in Amsterdam Zuidoost, the Bijlmer Centrum neighborhood is a bustling multicultural district, housing a diverse population of over 130 nationalities. The majority of its residents have migration backgrounds from countries such as Suriname, Morocco, Turkey, the Antilles, and various other parts of the world. This region is experiencing rapid development and has a strong sense of community pride. In addition to its residential areas, De Bijlmer boasts a sizable office district and an entertainment and shopping hub known as Arena Boulevard, which includes the Johan Cruijff Arena, home to Ajax's football stadium.

## Key statistics about Bijlmer Centrum

70%

of residents have **non-western backgrounds**

19%

**low-income households**, compared to the national average of 7%

C

is the most common **energy label** of the house in this area



## Considerations for energy justice in Bijlmer Centrum

### Recognitional justice



Address language diversity: common languages are Dutch, Arabic, Spanish, and English



Consider a more inclusive communication artifacts beside digital tools



Tailor assistance for specific subgroups, such as elderly individuals with disabilities



Acknowledge past experiences of injustice related to ethnicity

### Procedural justice



Create spaces for residents to share insights from their cultural backgrounds, community experiences, and energy consumption practices



Promote female participation by nurturing local female champions

### Distributional justice

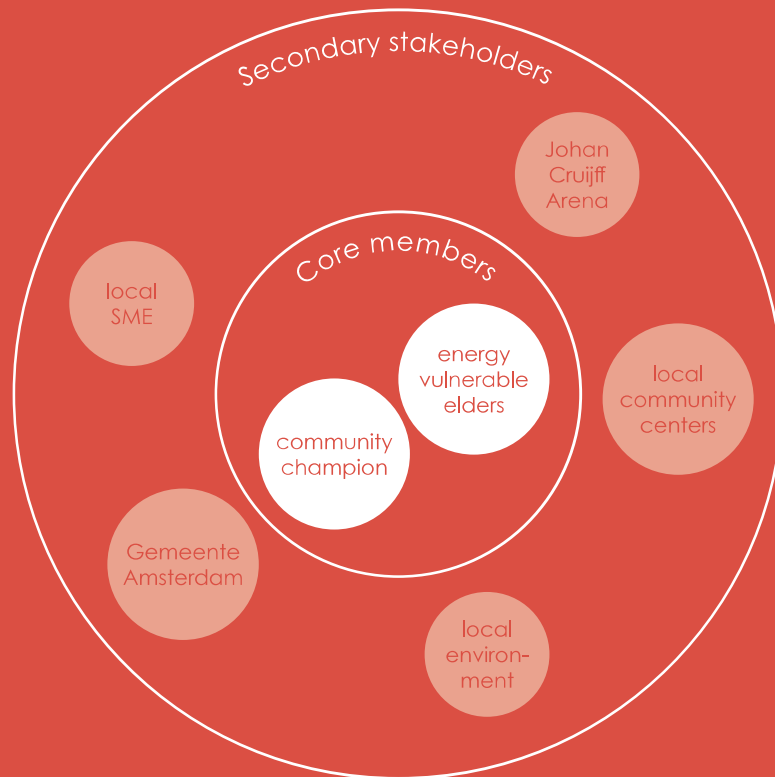
Perception of inequality between different social and income groups need to be addressed through equitable distribution of burdens and benefits

The case card

## Exercise 1 Who are our members and stakeholders?

### Case study

a hypothetical energy cooperative in Bijlmer Centrum



### Why do we target these core members?

Being a socially committed energy cooperative, our objective is to provide support to vulnerable elderly individuals within our local community. To fulfill this mission effectively, we will customize our communication and services to cater to the needs of this older demographic. To ensure that we can effectively reach out to them, we are also working towards establishing community champions as core members who can help us extend our assistance to those in need.

### Core member persona 1



- 65 years old
- Single household
- Middle education level
- Energy consumer

#### Energy vulnerable elder

Yannick lives alone in a social house in Bijlmer Center. He spends almost a quarter of his expense on energy bill. He wants to change the energy supplier or do something to lower the bill, but he is not sure how to do so. He's not fluent with digital devices. The local community center is his main source of interaction and information.

#### Frustration

- Find and switch to a suitable and cheaper energy supplier
- Lack of information

#### Goal

- Lower the energy bill
- Connect to other people

### Core member persona 2



- 40 years old
- Nuclear family with two kids
- Higher education level
- Energy prosumer

#### Community champion

Tessa has two kids and she is actively engaged in the community events. She grew up in Bijlmer Center and knows most people in the neighborhood. She hopes to create a nice environment for her kids, thus she spends her spare time in the city green garden and co-installed solar panel with the neighbors on their rooftop.

#### Frustration

- Find like-minded people to initiate ideas for local community
- Lack of time

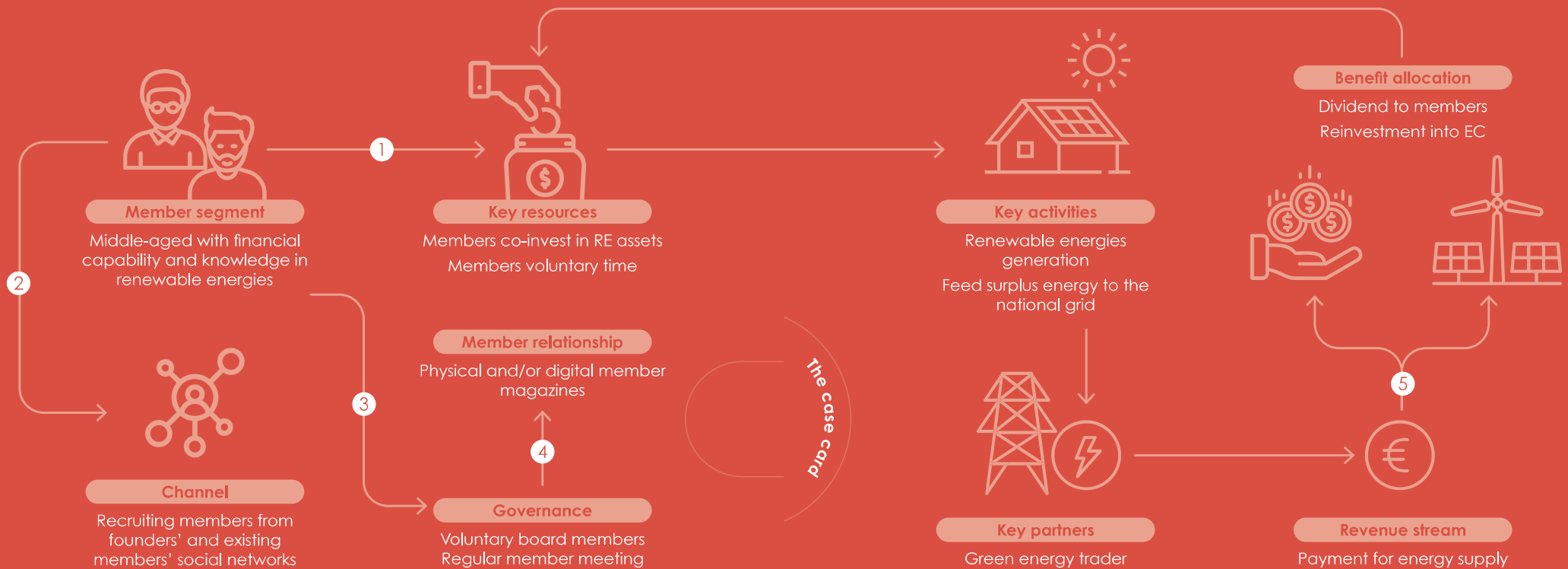
#### Goal

- Have a better and more connected community
- Contribute to local sustainability



### Exercise 3 Where do the injustices reside?

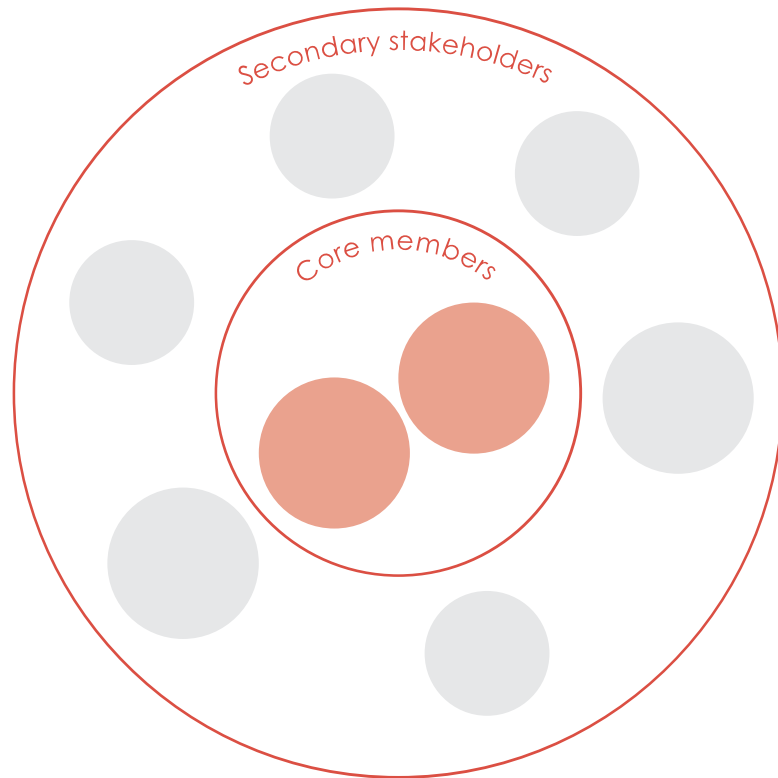
### Case study a common energy cooperative business model



### Injustices within this business model

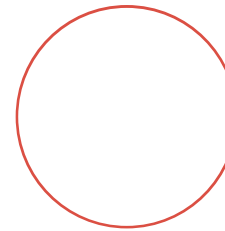
<p><b>1 Financial barriers constrain membership qualification</b></p> <p>Membership mandates a minimum financial investment (e.g., €545 per member in Germany). This prohibits vulnerable groups without financial means to participate as members</p> <p>Procedural justice</p>	<p><b>2 Homogeneous member composition</b></p> <p>The composition and ethos of energy cooperatives heavily rely on the initiator's social network, resulting in a homogeneous membership primarily consisting of middle-aged males with higher education and income.</p> <p>Recognitional justice</p> <p>Procedural justice</p>	<p><b>3 Time availability constrains participation in the decision making process</b></p> <p>Availability of time for volunteer commitments, particularly for board membership, becomes a barrier, potentially limiting participation from vulnerable groups due to time constraints.</p> <p>Recognitional justice</p> <p>Procedural justice</p>	<p><b>4 Lack of awareness and engagement activities for vulnerable groups</b></p> <p>Insufficient awareness of underrepresented groups and energy poverty often results in a lack of engagement initiatives targeted towards such groups.</p> <p>Procedural justice</p>	<p><b>5 External communities and natural environment are left out of distribution</b></p> <p>Access to affordable energy and energy efficiency services is contingent upon membership, while external community and environmental considerations often disregarded in distribution.</p> <p>Procedural justice</p> <p>Distributional justice</p>
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Why do we target these core members?

Core member persona 1



Name of the group:

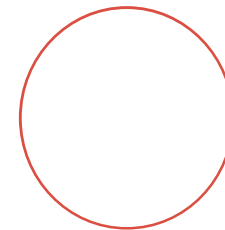
Living conditions...

Key demographics  
features...

Frustration

Goal

Core member persona 2



Name of the group:

Living conditions...

Key demographics  
features...

Frustration

Goal

Use → to illustrate the interaction of each element

Use 😊 to highlight where we've achieved justice

Use ! to pinpoint where injustices occur

Purpose

Governance

Key resources

Key activities

Benefit allocation

Member segment

Channel

Member relationship

Key partners

Revenue stream

### Injustices within this business model

Where in the business model do these injustices occur? What type of injustice do they represent: recognitional, procedural, or distributional?