



# Toolkit walkthrough

a HOW TO guide for GENTE toolkit users

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# Contents

of the GENTE Toolkit walkthrough

- 1 What is it & Who is it for
- 2 Overview of format & Methodology used to create it
- 3 Stages & Topics & Sections within the toolkit
- 4 Use case examples of how the toolkit can be used & the types of information included
- 5 Availability - where the toolkit can be accessed



# GENTE Toolkit

## What is it

Connects together all the **outcomes, learnings, tools, services**, and **research** of the GENTE project.

Provides access to outcomes in a **user-friendly way**, directing users to relevant information quickly.

## Who is it for

Anyone interested in **joining, setting up, participating** in, and/or **operating** a local energy community.



# GENTE Toolkit

## Who developed it

### Research partners




### Industry partners



### Community partners



## What is the source of the content

The content of the toolkit is made up of the reports, deliverables, code, data, test case results, and published academic papers that the  GENTE project produced.



Purpose	Goals & Motivations	Why	People	Use cases	Future of Energy Communities	Process	Options	Simulate	Forecast	Manage	Optimize	GENTE demo sites	Other toolkits
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[illegible]

Energy community definition	Stakeholders' needs	Why energy communities are important	Stakeholders	Use case definition	Future energy community scenarios	Co-design process	Business models	Digital twin	Generation forecasting	Building Energy Management System	Optimizer	Am Aawasser - Switzerland	Toolkits from other projects
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[illegible]



This is what the toolkit looks like.

The inspiration for the format was the **customer journey mapping methodology** which is a user experience method used to **visualise** the **process** that a person goes through in order to achieve a goal.





# GENTE Energy Community Toolkit

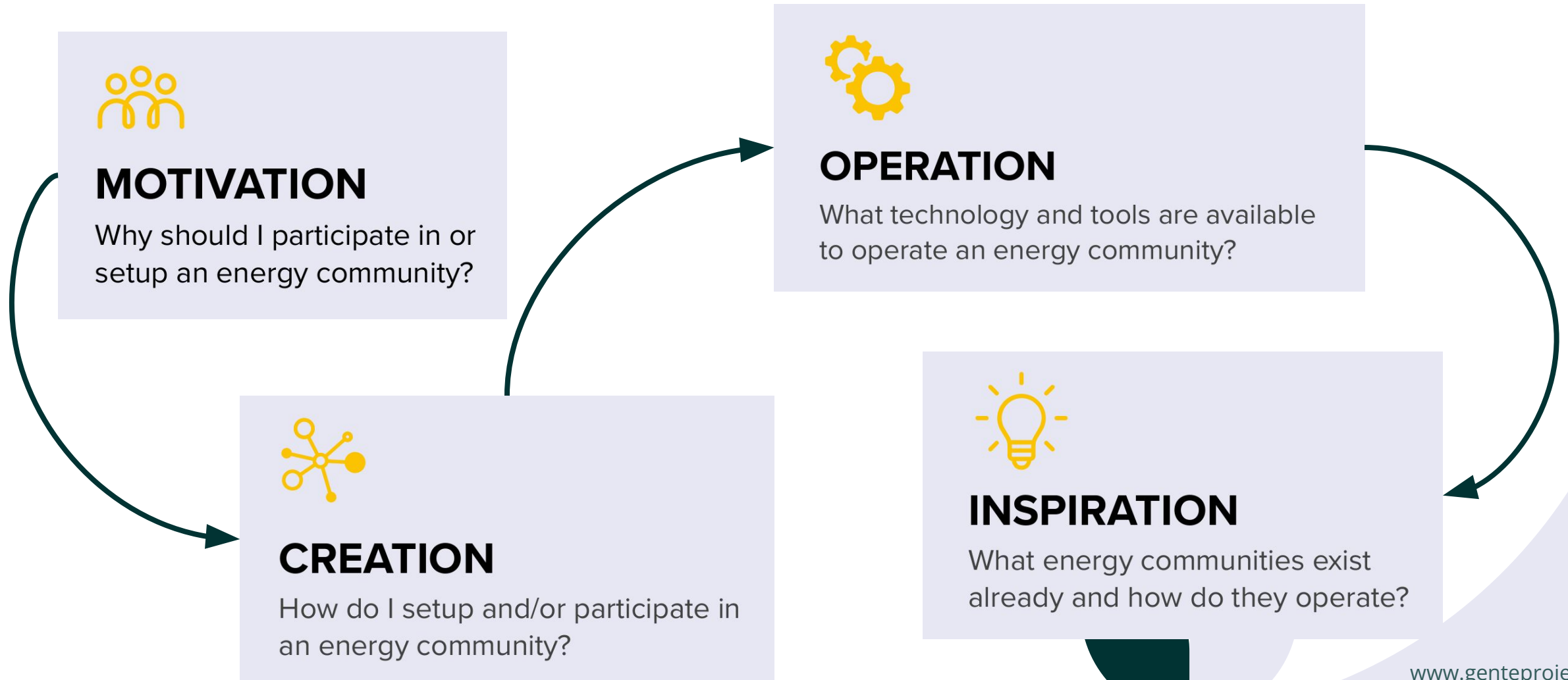
MOTIVATION Why should I participate in an energy community?				CREATION How do I setup and/or participate in an energy community?				OPERATION What technology and tools are available to operate an energy community?				INSPIRATION What energy communities exist already and how do they operate?			
Purpose	Goals & Motivations	Why	People	Use cases	Future of Energy Communities	Process	Options	Simulate	Forecast	Manage	Optimize	GENTE demo sites	Other toolkits		
QUESTIONS YOU MIGHT BE ASKING															
What is an energy community?	What are your most important needs as an energy stakeholder either as consumer, prosumer, technology provider or asset owner?	Why are energy communities an important concept?	Who are the relevant stakeholders and what is their role?	What use cases exist for the creation and operation of energy communities?	How many energy communities are there in Europe?	How do we make decisions?	What types of energy community business model are there and how are they defined?	How do the different aspects of a building (materials, type of controllers, outdoor conditions, occupancy) affect building energy performance and indoor conditions?	Can short-term energy power (1 day) be forecasted for the energy network?	What can be done to improve the energy production from the PV plants in use?	How can the energy production and consumption of an energy community be optimized?	What are some examples of successful demo models for energy communities?	Where can I find information and guidance about other energy community topics?		
I know any energy communities described in the partners' literature?	What are your most commonly proposed use cases?														
What are the main characteristics of energy communities?															
What are the four archetypes of energy communities defined for the GENTE project?															
KEY TERMS															
Definition	Check methods	Future scenarios	Partners	Partners	Partners	Partners	Partners	Partners	Partners	Partners	Partners	Partners	Partners		
RESOURCES															
Energy community definition															
Future energy community scenarios															
Use case definition - need owners															
Energy community definition															
Community scenarios															
Technical & privacy perspective															
Use case definition															
System architecture & Data models															
Thermal load forecasting															
Grid support services															
Building Energy Management System															
Distributed Ledger Technology (DLT)															
HSE Living Lab - Sweden															
Energy community definition															

Across the top are what are call the **Stages**. These are the **top-level actions** we found that people interested in energy communities go through. The Stages aim to answer and provide information about **specific questions** someone interested in energy communities might have.

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# GENTE Toolkit - Stages





Each Stage is divided into **Topics** to give **structure** to the content.



# GENTE Toolkit - Topics



## MOTIVATION

Why should I participate in or setup an energy community?

Purpose

Why

People

Use cases

Goals & Motivations

Future of energy communities

what energy communities are for  
what they do  
what goals they can help fulfil  
the stakeholders involved  
what type of cases they can be applied to  
how they might contribute in the future to  
the energy transition



# GENTE Toolkit - Topics



## **CREATION**

How do I setup and/or participate in an energy community?

Process

Options

the process involved in creating a new community

what options exist for the setup of a new community, such as business models, organisational models, regulations that exist in your locality, etc



# GENTE Toolkit - Topics



## OPERATION

What technology and tools are available to operate an energy community?

Simulate

Manage

Forecast

Optimize

how energy communities can be simulated to help define the optimal setup and operation

how production and consumption can be forecast in various ways

tools for managing energy communities

methods for optimising the operation of communities to maximise on achieving the goals of the community



# GENTE Toolkit - Topics



## INSPIRATION

What energy communities exist already and how do they operate?

GENTE demo sites

Other toolkits

the GENTE demo sites  
toolkits created by other projects to  
provide more extensive / broader set of  
information than just GENTE can  
provide





# GENTE Energy Community Toolkit

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The content of the toolkit is grouped into **Sections**.



# GENTE Toolkit - Sections



## QUESTIONS YOU MIGHT BE ASKING

Identify Stages that will help answer your specific questions

Provides insight into the types of questions the content of the toolkit aims to answer



## KEY TERMS

Identify Stages that relate to particular topics you are interested in

Used to aid in searching for content in topic areas of interest



## RESOURCES

Links to relevant information, reports, findings, outcomes, results of test cases & KPIs, videos, code, data, and articles developed in GENTE for each Stage



# Toolkit Use Cases

Explain how the toolkit can be used & types of information included

- 1 Forecast
- 2 Co-design
- 3 Optimize
- 4 Example of energy communities

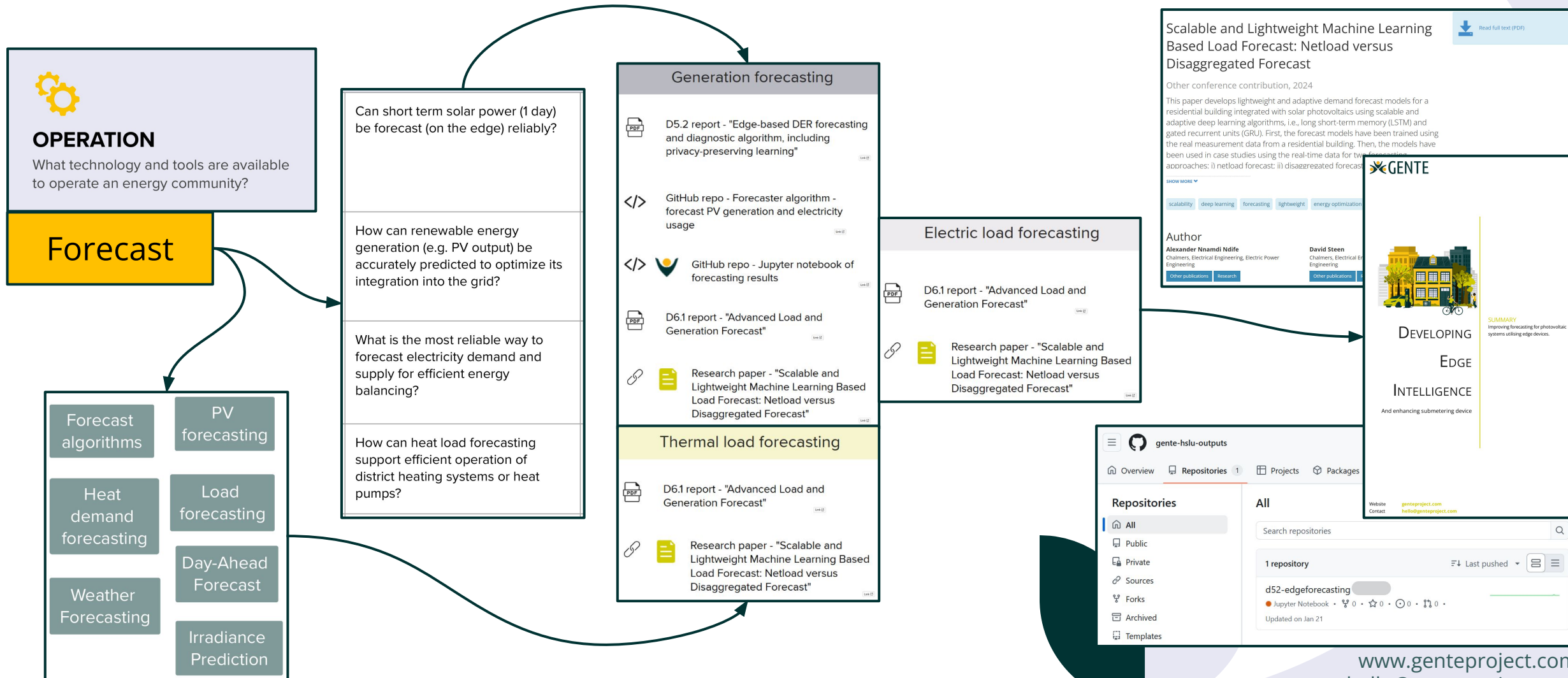






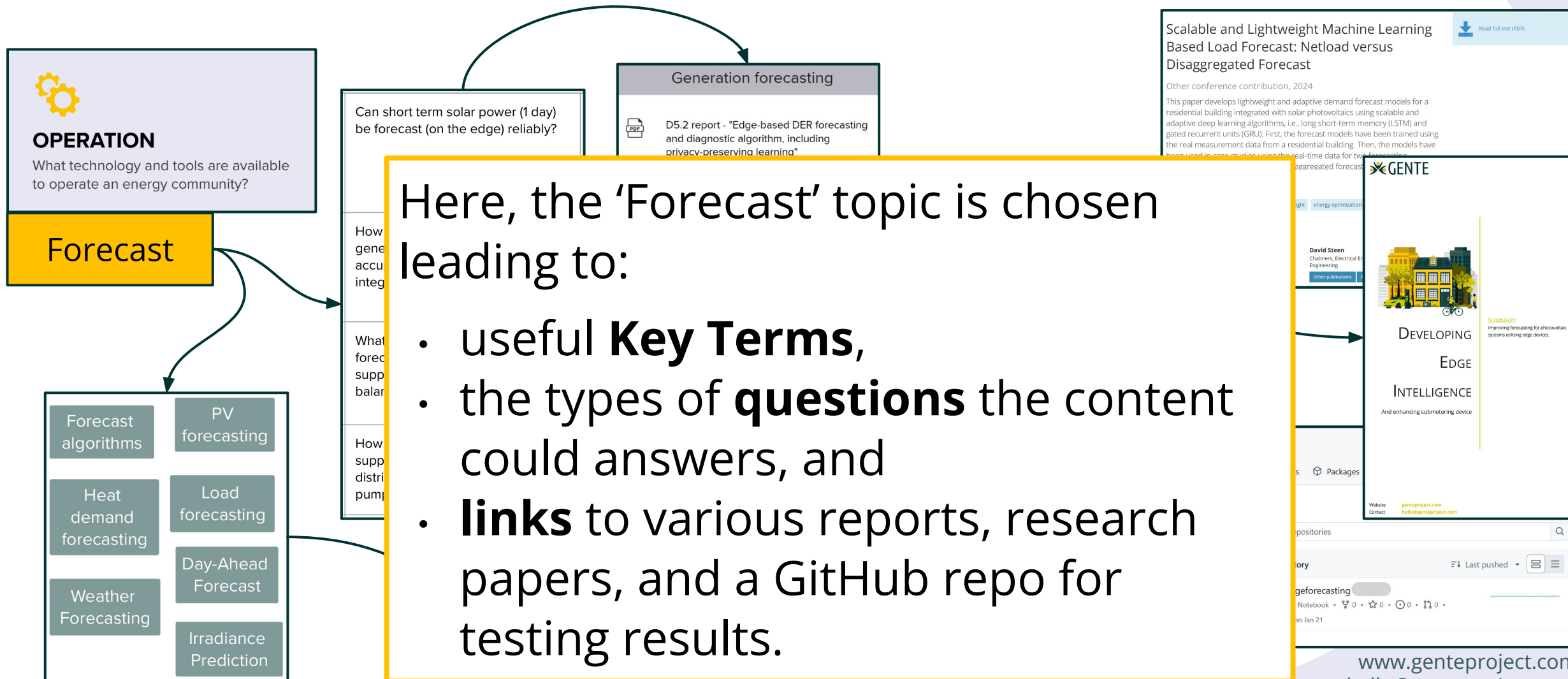


# GENTE Toolkit - Use case: Forecast





# GENTE Toolkit - Use case: Forecast

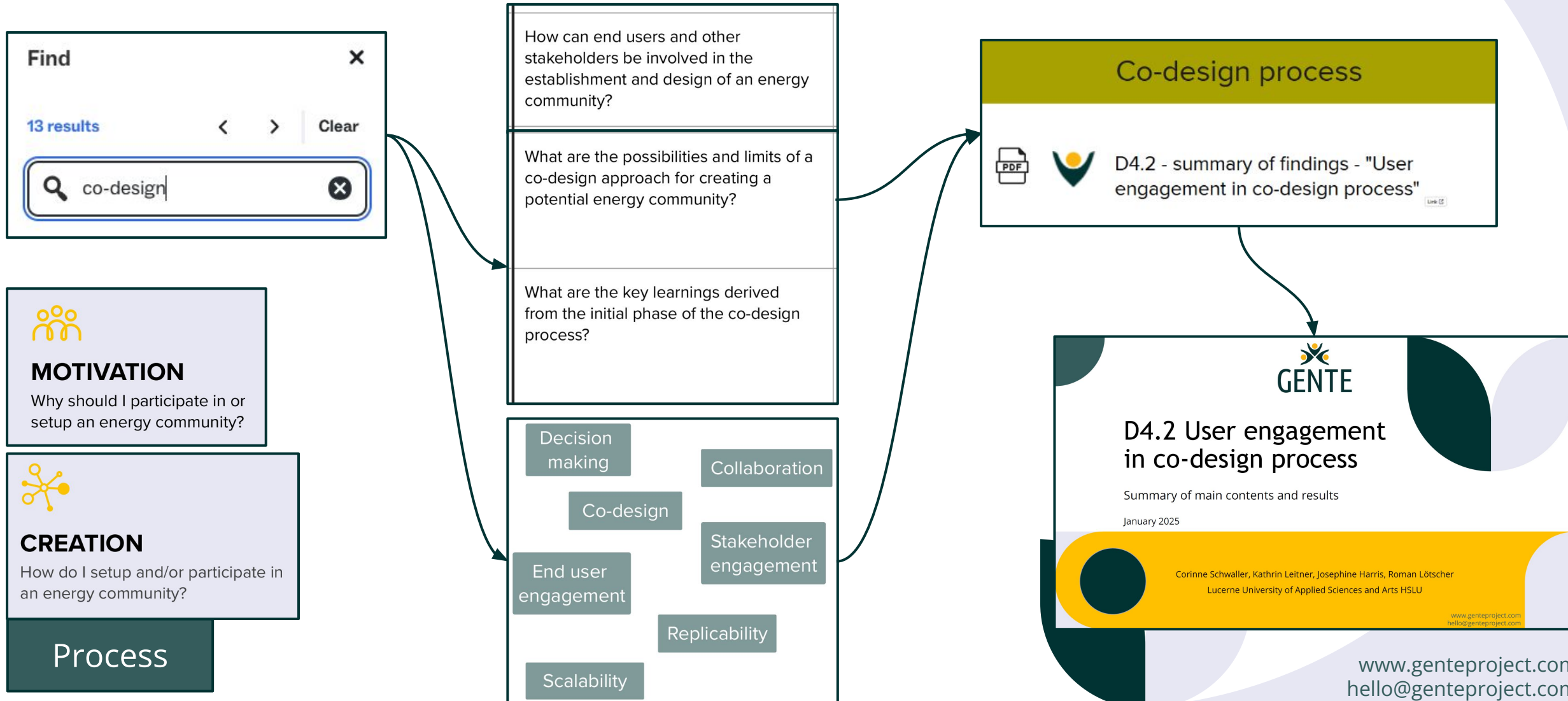






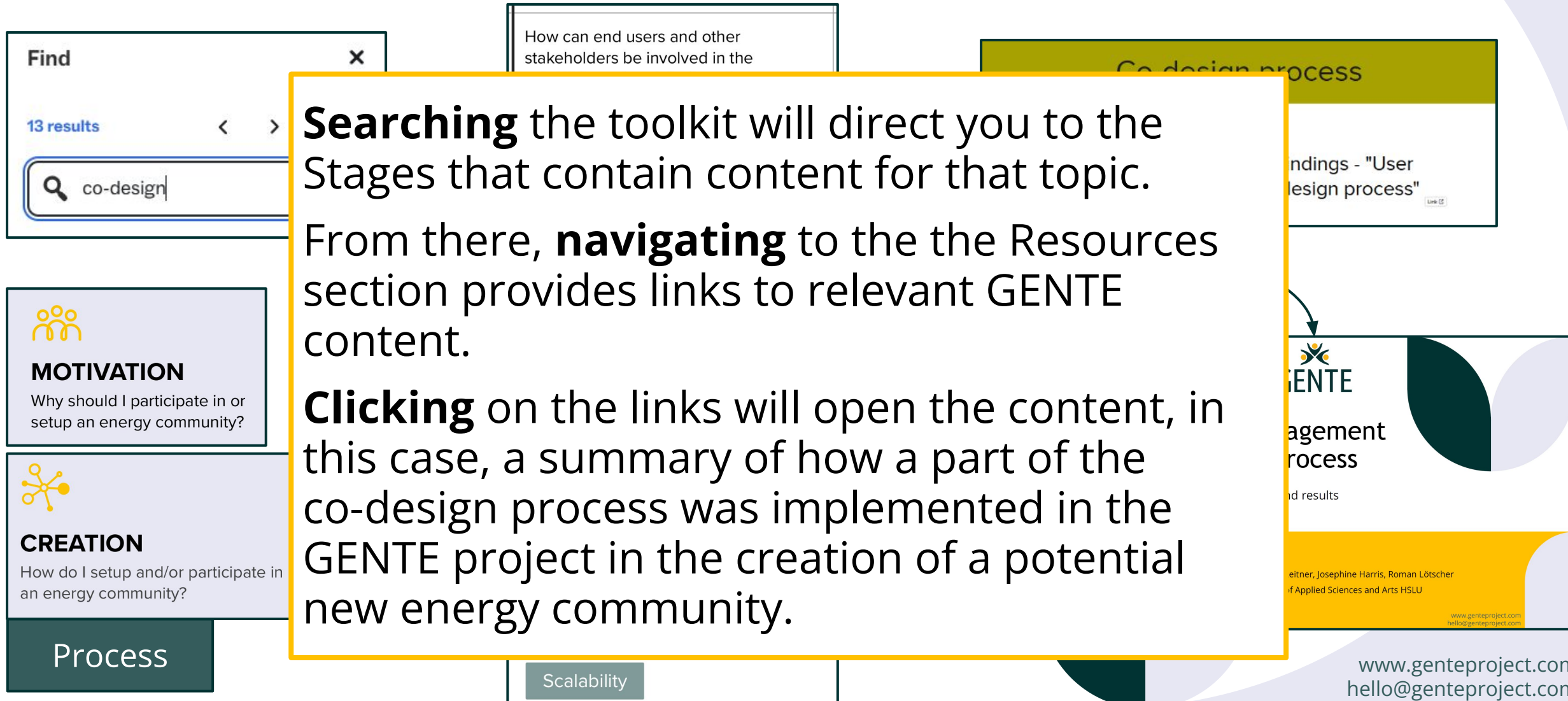


# GENTE Toolkit - Use case: Co-design





# GENTE Toolkit - Use case: Co-design



**Searching** the toolkit will direct you to the Stages that contain content for that topic.

From there, **navigating** to the the Resources section provides links to relevant GENTE content.

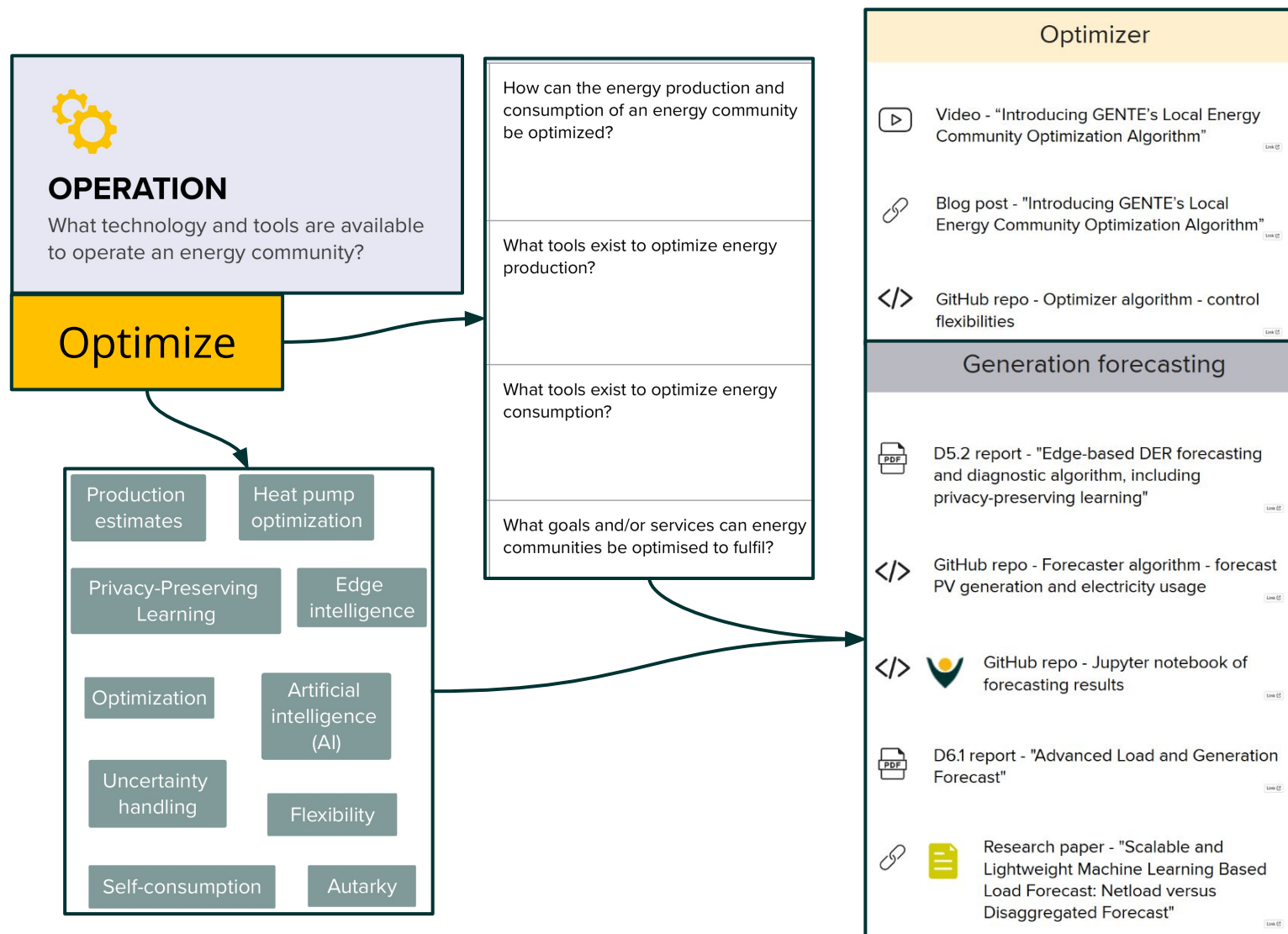
**Clicking** on the links will open the content, in this case, a summary of how a part of the co-design process was implemented in the GENTE project in the creation of a potential new energy community.







# GENTE Toolkit - Use case: Optimize



The 'Optimize' Topic contains examples of all the **types of content** the toolkit includes, such as:

Videos

Blog posts & Articles

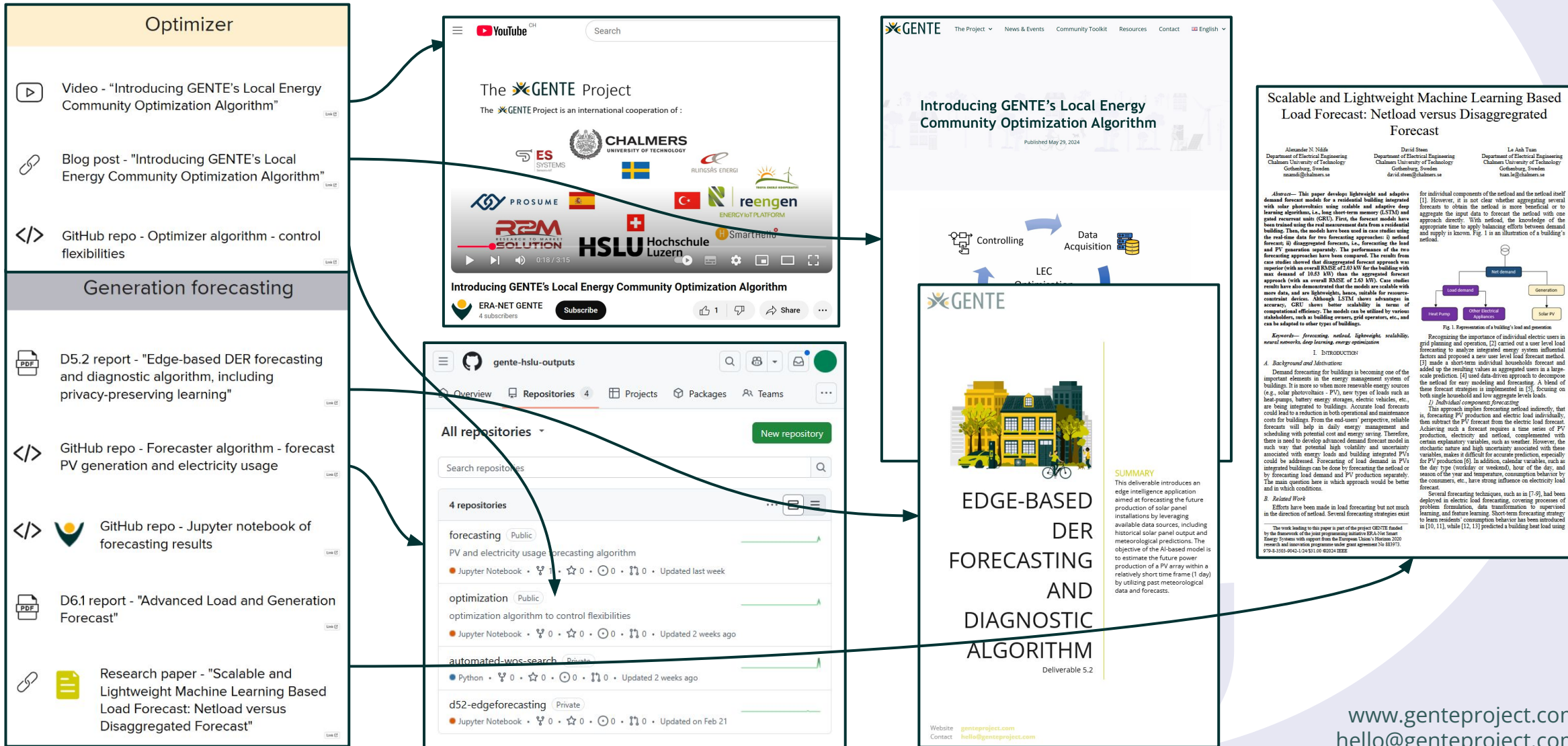
Code & data repositories

Reports

Research papers



# GENTE Toolkit - Use case: Optimize

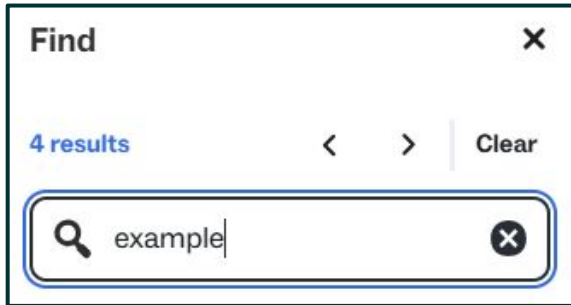








# GENTE Toolkit - Use case: Examples



Use the **search function** in Mural or your PDF viewer to find where your **search term** occurs in the toolkit.



# GENTE Toolkit - Use case: Examples

Find ×

4 results < > Clear

×

What are some examples of conceptual data models for LECs?

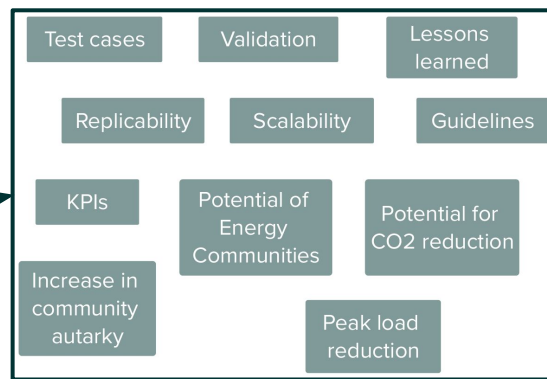
What are some examples of logical data models for LECs?

What are some examples of a data management system applied to real-world LECs (physical data models)?

What is the potential for energy communities in reducing CO2 emissions?

Could an energy community help me increase autarky and self consumption of my PV installation?

Can energy communities help to reduce power peaks from the grid?



### Am Aawasser - Switzerland

- Am Aawasser website
- Am Aawasser Factsheet
- Article - EcoCoach at Am Aawasser
- Video - "Introducing GENTE's Local Energy Community Optimization Algorithm"
- Blog post - "Introducing GENTE's Local Energy Community Optimization Algorithm"
- D5.1 - Presentation & Documentation - SmartHelio sub-metering devices
- D8.1 report - "GENTE System Architecture: Conceptual, logical and physical data models for LEC"
- D9.1 report - "Test cases, assessment framework and KPIs"
- Results - D9.2 report - "Summary of demo case requirements, scenarios, solutions and evaluation for each site"
- GitHub repo - Am Aawasser Test Case results
- Results - D9.3 report - "Assessment of demonstration, identification and lessons learned/best practices for replication"

### HSB Living Lab - Sweden

- HSB Living Lab website
- HSB Living Lab Factsheet
- D6.2 report - "Advanced BEMS for "Building control as a service"
- Research paper - "A Novel Energy Management System for Optimal Energy and Flexibility Scheduling of Residential Buildings: A Case Study in HSB Living Lab"
- Research paper - "Flexibility provision from battery storage and PV inverters using IoT platform: Real-life demonstrations at Chalmers campus"
- D6.3 report - "Optimal LEC operation based on smart BEMS"
- D6.4 report - "Grid support services from LEC to system operators"
- D8.1 report - "GENTE System Architecture: Conceptual, logical and physical data models for LEC"
- D9.1 report - "Test cases, assessment framework and KPIs"
- D5.3 report abstract - "Community digital twin"
- D5.3 report - "Community digital twin"
- Research paper - based on D5.3
- Results - D9.2 report - "Summary of demo case requirements, scenarios, solutions and evaluation for each site"
- Results - D9.3 report - "Assessment of demonstration, identification and lessons learned/best practices for replication"

The term *'example'* leads you to the extensive resources gathered throughout the project about the **GENTE demo sites**.



# Toolkit Availability

Where the toolkit can be accessed

1

On the GENTE website

<https://genteproject.com/community-toolkit/>

2

As a Mural board - [GENTE toolkit](#)

3

As PDFs - [Toolkit PDFs folder](#)





- Get in touch with the GENTE team via [hello@genteproject.com](mailto:hello@genteproject.com)

- Recommended citation for this guide:

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