



Toolkit walkthrough

a HOW TO guide for GENTE toolkit users

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May 2025

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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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.

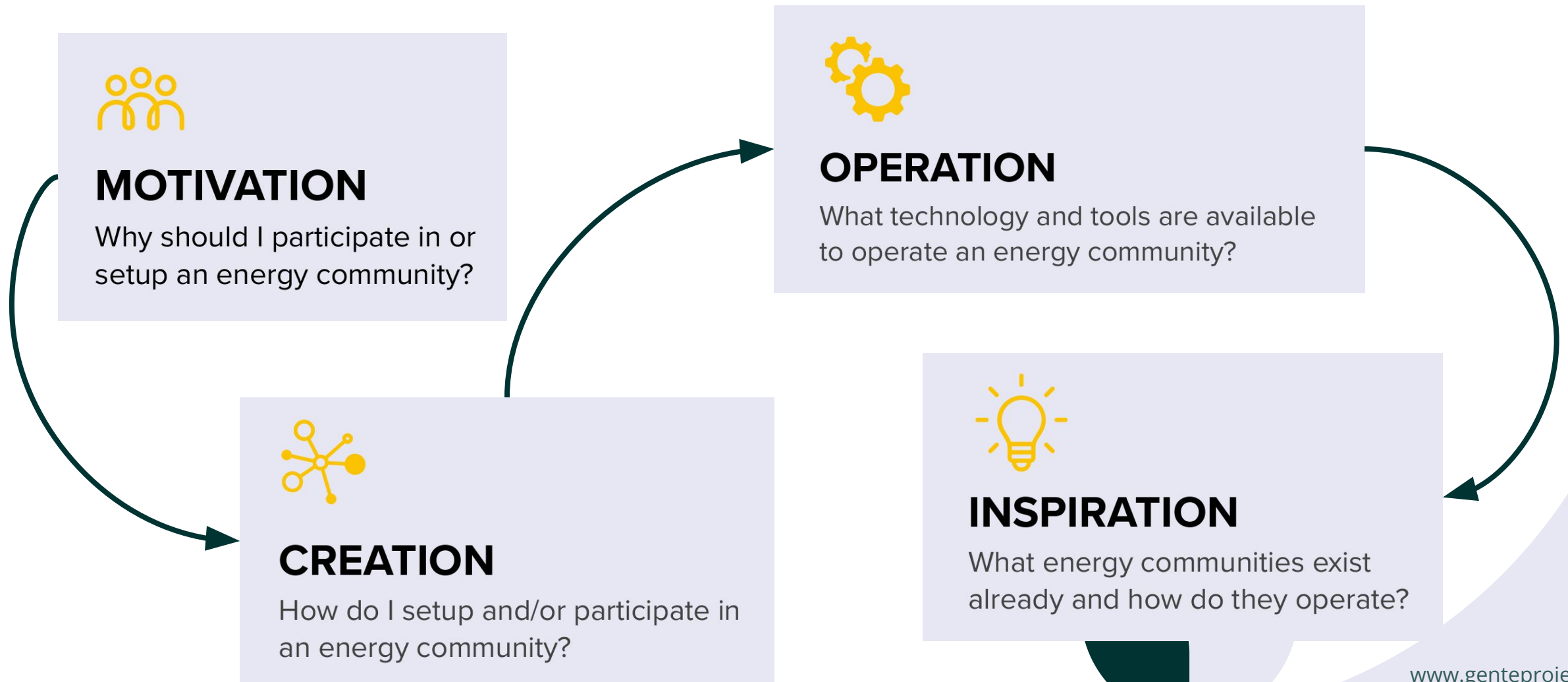


GENTE Energy Community Toolkit

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/modules?	How can the energy production and consumption of an energy community be optimized?	What are some examples of successful data models for energy communities?	Where can I find information and guidance about other energy community topics?
I use my energy consumption data in the partner's location?	What are your most important needs as an energy stakeholder either as consumer, prosumer, technology provider or asset owner?												What other toolkits and guidance exist to help me create, run and operate an energy community?
What are the main characteristics of energy communities?													
What are the five archetypes of energy communities defined for the GENTE project?													
KEY TERMS													
RESOURCES													
Energy community definition													
<p>7 Videos - GENTE Project overview</p> <p>D4.1 report abstract - "Characteristics of energy communities and motivations, engagement, and socio-economic profiles of end users"</p> <p>D4.1 report - "Characteristics of energy communities and motivations, engagement, and socio-economic profiles of end users"</p> <p>Ann. Assessment Community website</p> <p>HSB Living Lab Community website</p> <p>Article - "Toward a new model: 'Providing the missing ground' in building"</p>	<p>D4.2 report abstract - "Future energy community scenarios"</p> <p>D4.2 report - "Future energy community scenarios"</p> <p>Research paper - based on D2.1 - "The Development of Energy Communities in Europe: History, Success Factors, Future Requirements"</p>	<p>D4.3 report abstract - "Future energy community scenarios"</p> <p>D4.3 report - "Future energy community scenarios"</p> <p>Research paper - based on D2.1 - "The Development of Energy Communities in Europe: History, Success Factors, Future Requirements"</p>	<p>D4.4 report abstract - "Future energy community scenarios"</p> <p>D4.4 report - "Future energy community scenarios"</p> <p>Research paper - based on D2.1 - "The Development of Energy Communities in Europe: History, Success Factors, Future Requirements"</p>	<p>D4.5 report abstract - "Future energy community scenarios"</p> <p>D4.5 report - "Future energy community scenarios"</p> <p>Research paper - based on D2.1 - "The Development of Energy Communities in Europe: History, Success Factors, Future Requirements"</p>	<p>D4.6 report abstract - "Future energy community scenarios"</p> <p>D4.6 report - "Future energy community scenarios"</p> <p>Research paper - based on D2.1 - "The Development of Energy Communities in Europe: History, Success Factors, Future Requirements"</p>	<p>D4.7 report abstract - "Future energy community scenarios"</p> <p>D4.7 report - "Future energy community scenarios"</p> <p>Research paper - based on D2.1 - "The Development of Energy Communities in Europe: History, Success Factors, Future Requirements"</p>	<p>D4.8 report abstract - "Future energy community scenarios"</p> <p>D4.8 report - "Future energy community scenarios"</p> <p>Research paper - based on D2.1 - "The Development of Energy Communities in Europe: History, Success Factors, Future Requirements"</p>	<p>D4.9 report abstract - "Future energy community scenarios"</p> <p>D4.9 report - "Future energy community scenarios"</p> <p>Research paper - based on D2.1 - "The Development of Energy Communities in Europe: History, Success Factors, Future Requirements"</p>	<p>D4.10 report abstract - "Future energy community scenarios"</p> <p>D4.10 report - "Future energy community scenarios"</p> <p>Research paper - based on D2.1 - "The Development of Energy Communities in Europe: History, Success Factors, Future Requirements"</p>	<p>D4.11 report abstract - "Future energy community scenarios"</p> <p>D4.11 report - "Future energy community scenarios"</p> <p>Research paper - based on D2.1 - "The Development of Energy Communities in Europe: History, Success Factors, Future Requirements"</p>	<p>D4.12 report abstract - "Future energy community scenarios"</p> <p>D4.12 report - "Future energy community scenarios"</p> <p>Research paper - based on D2.1 - "The Development of Energy Communities in Europe: History, Success Factors, Future Requirements"</p>	<p>D4.13 report abstract - "Future energy community scenarios"</p> <p>D4.13 report - "Future energy community scenarios"</p> <p>Research paper - based on D2.1 - "The Development of Energy Communities in Europe: History, Success Factors, Future Requirements"</p>	<p>D4.14 report abstract - "Future energy community scenarios"</p> <p>D4.14 report - "Future energy community scenarios"</p> <p>Research paper - based on D2.1 - "The Development of Energy Communities in Europe: History, Success Factors, Future Requirements"</p>
Future energy community scenarios													
Use case definition - need owners													
Co-design process													
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)													
HSB 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.

GENTE Toolkit - Stages



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]

<p>How are energy communities described in the policies/ legislation?</p>	<p>What are your most community projects?</p>	<p>What other initiatives and guidance exist to help the music, jazz, and operations energy community?</p>
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What are the main characteristics of energy communities?		Energy system Physical data	
What are the four archetypes of energy communities		Energy in reducing	

<p>2021-2022 for the academic property.</p>	
	<p>THE ACADEMY UNIT</p>


[illegible]

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


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

content


[World Bank Projects](#)

[Data Explorer](#)

[Data Explorer](#)

[Data Explorer](#)

[Data Explorer](#)

[Data Explorer](#)

[Data Explorer](#)

[Data Explorer](#)

[Data Explorer](#)

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[All Academic Community website](#) |
 [Energy Solidarity Toolkit - CES](#) |
 [HSE Energy Hub Community website](#) |
 [Reference Inquiry Toolkit - Users'GIP](#)

The screenshot displays the Energy Community Card Game interface. At the top, there is a navigation bar with a search icon and a text input field containing "Article: 'Toward a gas network' (Reading the middle ground) in bulletin". Below the navigation bar, the main content area is divided into several sections. On the left, there is a sidebar with a "Future energy community scenarios" section. The main content area features a "Economic community definition" section, followed by a "Community scenarios" section, a "E37 report" section, a "Future energy community" section, a "Electricity meter for electricity" section, a "Sub-metering device" section, and a "Results" section. The "Results" section shows a "Results - E37 report" table with columns for "Scenario", "E37 report", and "Results". The table contains two rows of data. The first row is for the "Scenario" and the second row is for the "E37 report". The "Results" column shows the "Results" for each scenario. The table is partially visible, showing the first two rows of data.

<p>Future energy community scenarios</p> <p>D33 report: studies - "Future energy use cases"</p>	<p>Use case definition - need owners</p> <p>D32 report: "Definition of highly applicable use cases"</p>	<p>Energy community development</p> <p>D34 report: "Grid operation services from LEC to system operators"</p>	<p>Technical & privacy perspective</p> <p>D35 report: "Future energy community services"</p>	<p>Deliverable - Aja Developer Toolkit</p> <p>D36 report: "Aja Developer Toolkit: Case study 2"</p>	<p>Deliverable - Aja Developer Toolkit</p> <p>D37 report: "Aja Developer Toolkit: Case study 3"</p>
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Community scenario	E01 report: "Future energy community scenario"	E03 report: "Optimal LCC operation based on user mobility"	E04 report: "Characteristics of energy communities and motivations, a new set of scenarios and related energy"	E07 report: "Guidelines and requirements, a new set of scenarios and related energy"	Research paper: "Gridable and lightweight Machine Learning Based Load Forecast: National versus Decentralized Forecast"	Research paper: "Gridable and lightweight Machine Learning Based Load Forecast: National versus Decentralized Forecast"	Research paper: "Gridable and lightweight Machine Learning Based Load Forecast: National versus Decentralized Forecast"	Results: "D3D report: Assessment of penetration, identification and impacts on electricity markets for mobility"	Scholarship initiative
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The screenshot displays the 'Energy community definition' tool interface. It features a top navigation bar with a search icon and a dropdown menu. Below the navigation bar, there are several project cards, each representing a different energy community project. The cards are organized into a grid layout. The first card on the left is titled 'Research paper: based on D3 - The Development of Energy Communities in Europe: history, Success Factors, Future Perspectives'. It includes a thumbnail image and a brief description. The second card is titled 'Co-design process' and features a thumbnail image of a group of people. The third card is titled 'Use case definition' and includes a thumbnail image of a document. The fourth card is titled 'Thermal load forecasting' and includes a thumbnail image of a bar chart. The fifth card is titled 'D14 report: "Grid operation scenarios from D3 to system operation"' and includes a thumbnail image of a document. The sixth card is titled 'Building Energy Management System' and includes a thumbnail image of a building. The seventh card is titled 'HSE Living Lab - Sweden' and includes a thumbnail image of a group of people. The eighth card is titled 'Energy community definition' and includes a thumbnail image of a group of people. The interface is clean and modern, with a white background and blue accents.

[illegible]

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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KEY TERMS													
RESOURCES													
Stakeholders - needs						Why energy							
Energy						Energy							
Energy community definition						Energy community definition							
Future energy community scenarios						Future energy community scenarios							
Use case definition - need owners						Use case definition - need owners							
Co-design process						Co-design process							
Energy community definition						Energy community definition							
Technical & privacy perspective						Technical & privacy perspective							
Use case definition						Use case definition							
System architecture & Data models						System architecture & Data models							
Thermal load forecasting						Thermal load forecasting							
Grid support services						Grid support services							
Building Energy Management System						Building Energy Management System							
Distributed Ledger Technology (DLT)						Distributed Ledger Technology (DLT)							
HSE Living Lab - Sweden						HSE Living Lab - Sweden							
Energy community definition						Energy community definition							

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

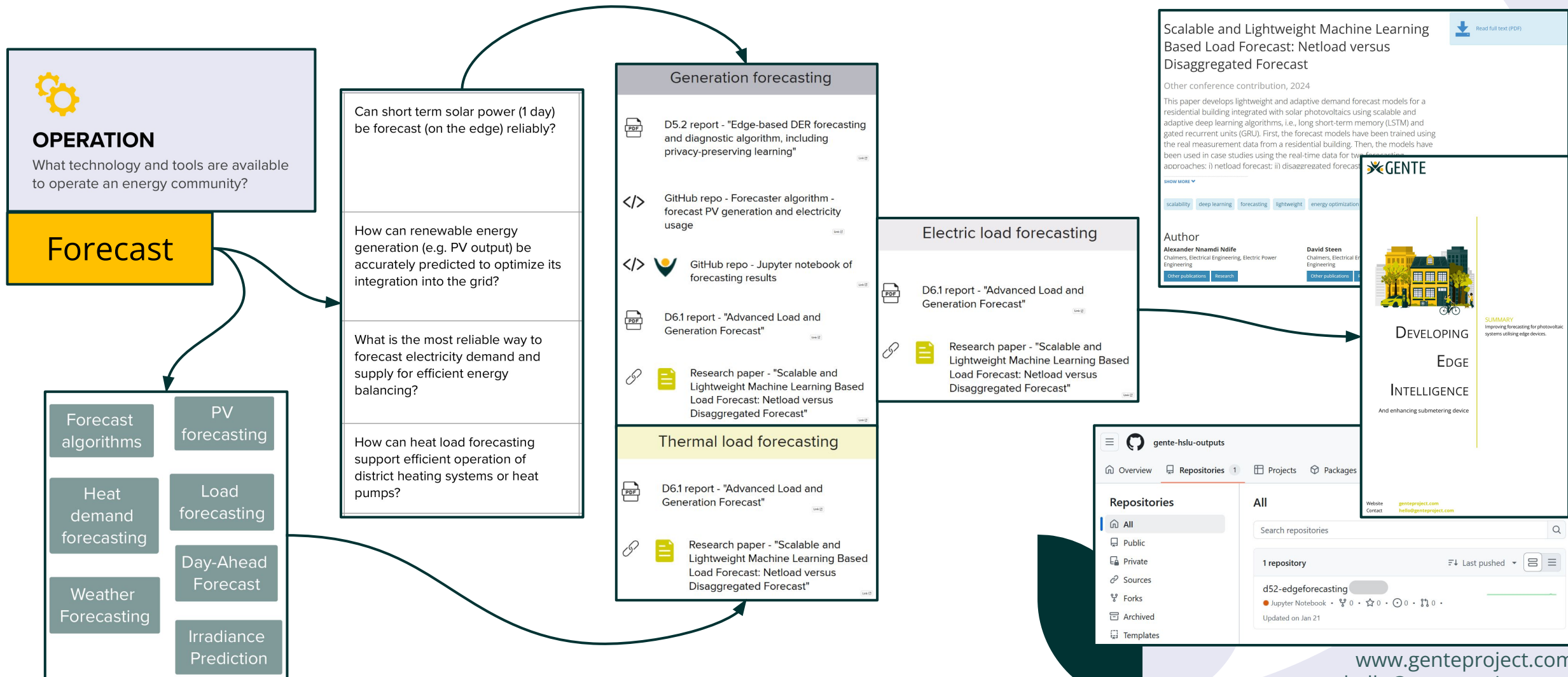
Toolkit Use Cases

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

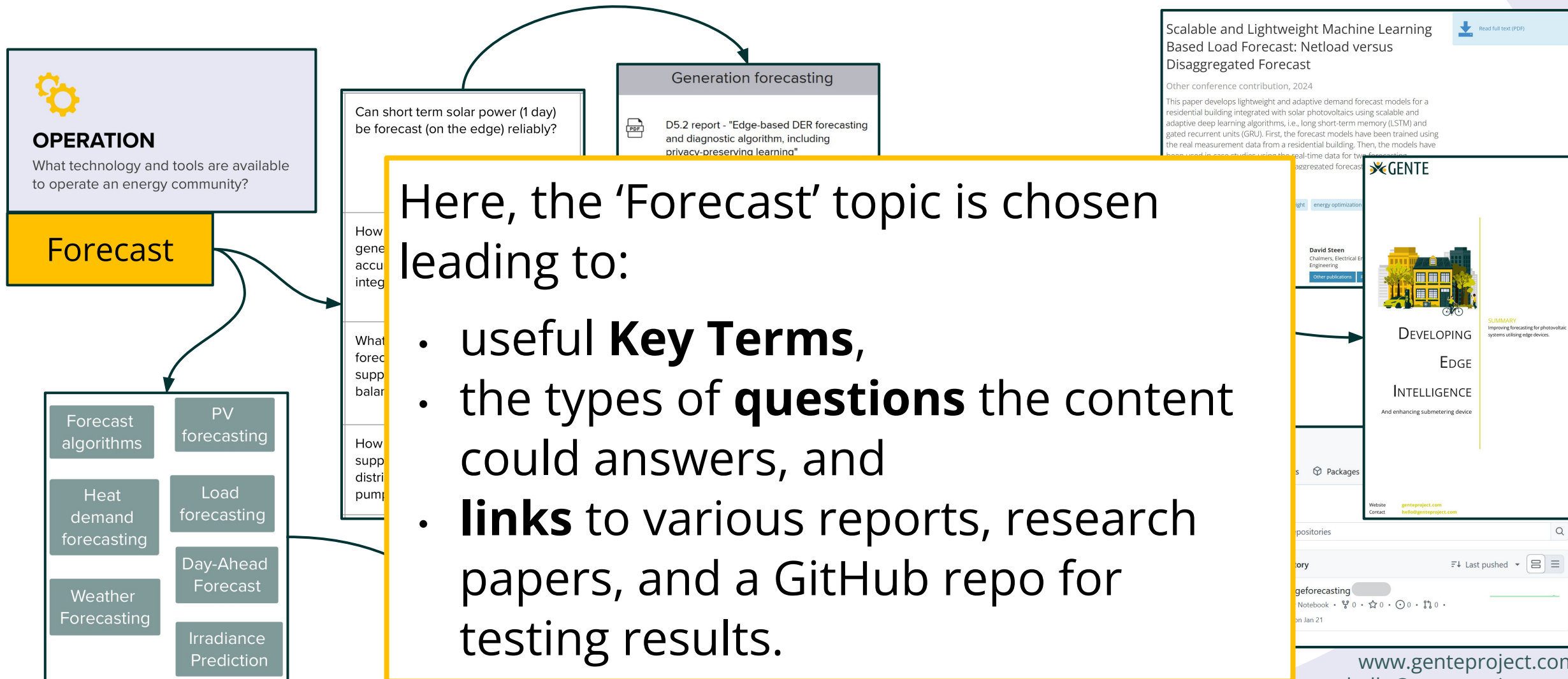
- 1 Forecast
- 2 Co-design
- 3 Optimize
- 4 Example of energy communities



GENTE Toolkit - Use case: Forecast



GENTE Toolkit - Use case: Forecast



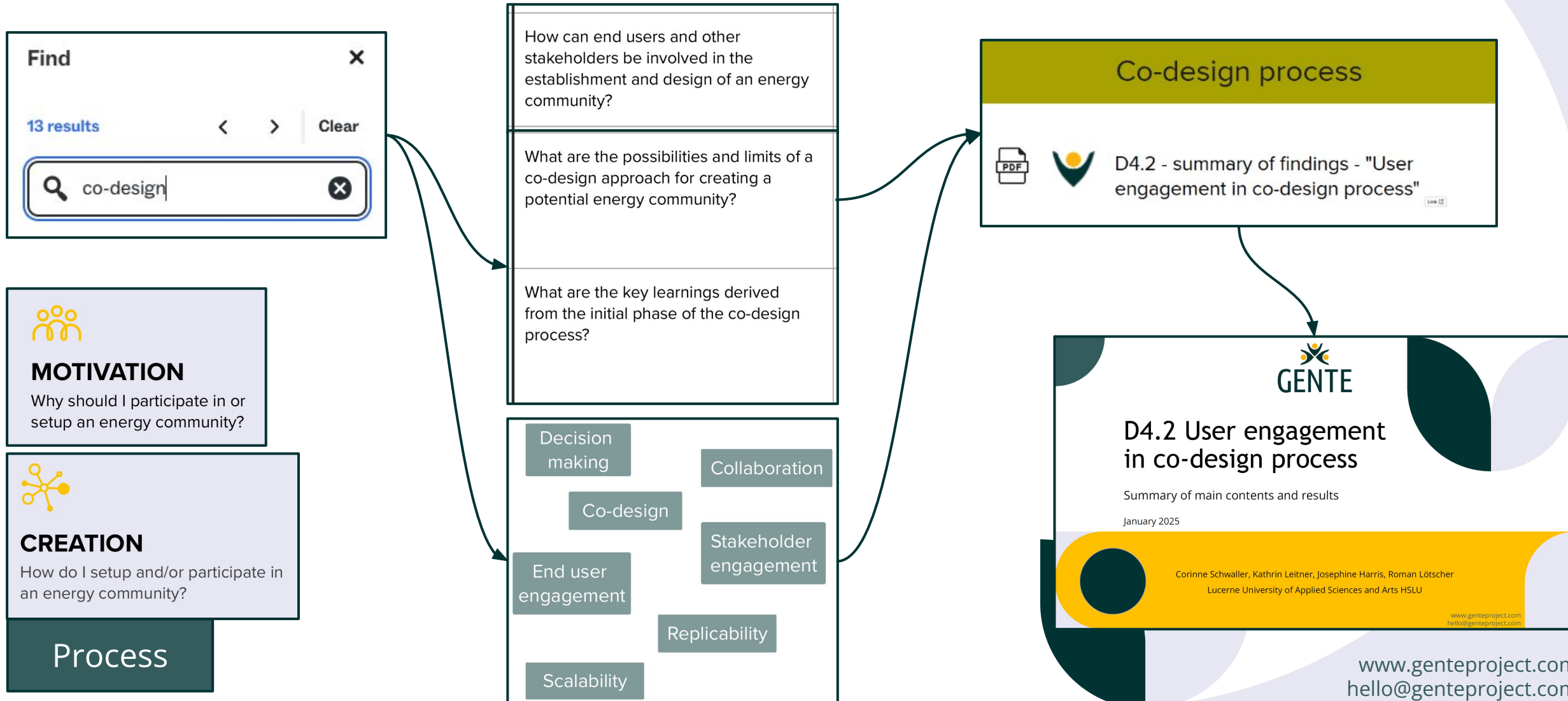


Energy Community Toolkit

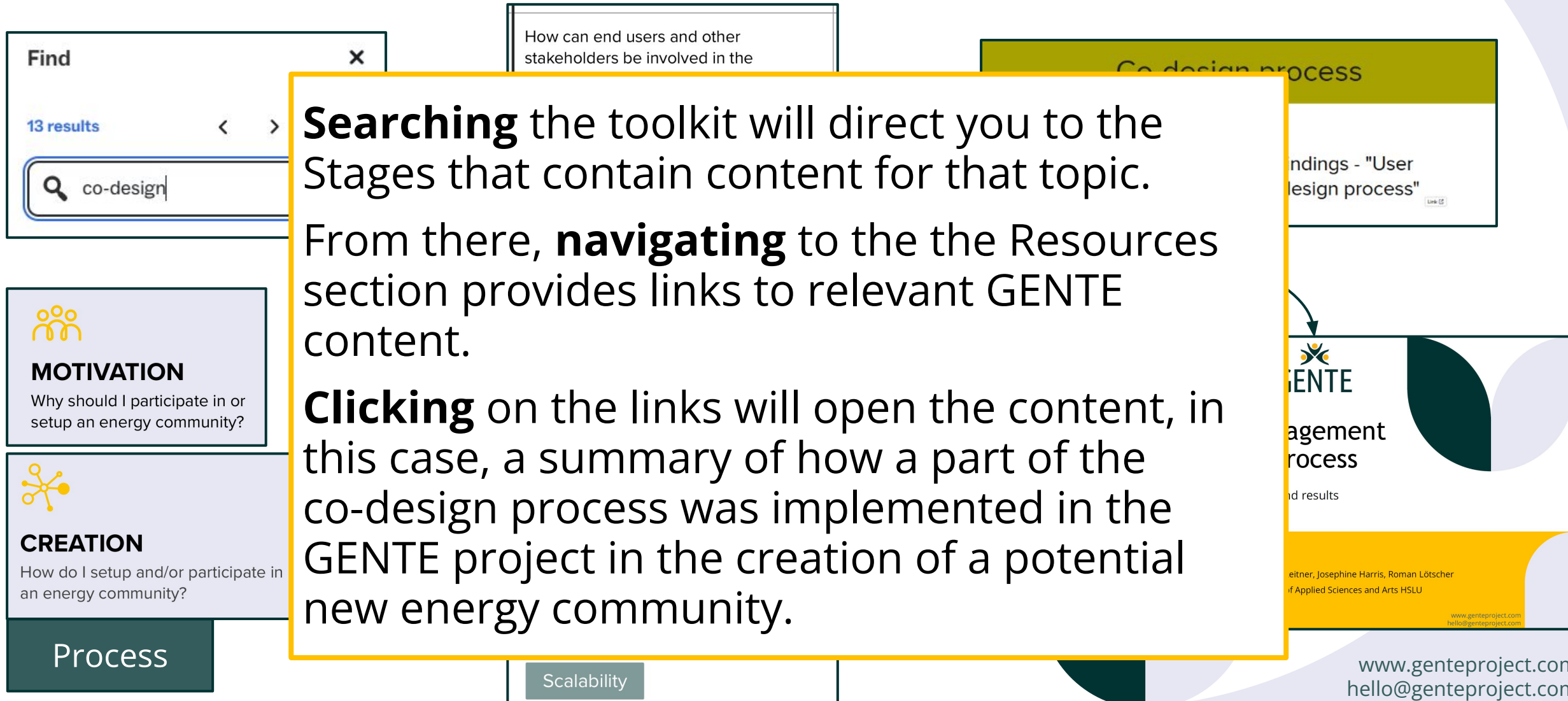
This use case shows entry points for a user's area of interest that does *not* exist as a specific Stage or Topic in the toolkit but in various places throughout.

Search the toolkit for the topic of interest.

GENTE Toolkit - Use case: Co-design



GENTE Toolkit - Use case: Co-design



Find 13 results

co-design

How can end users and other stakeholders be involved in the

Co design process

Findings - "User design process"

MOTIVATION
Why should I participate in or setup an energy community?

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

Process

Scalability

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

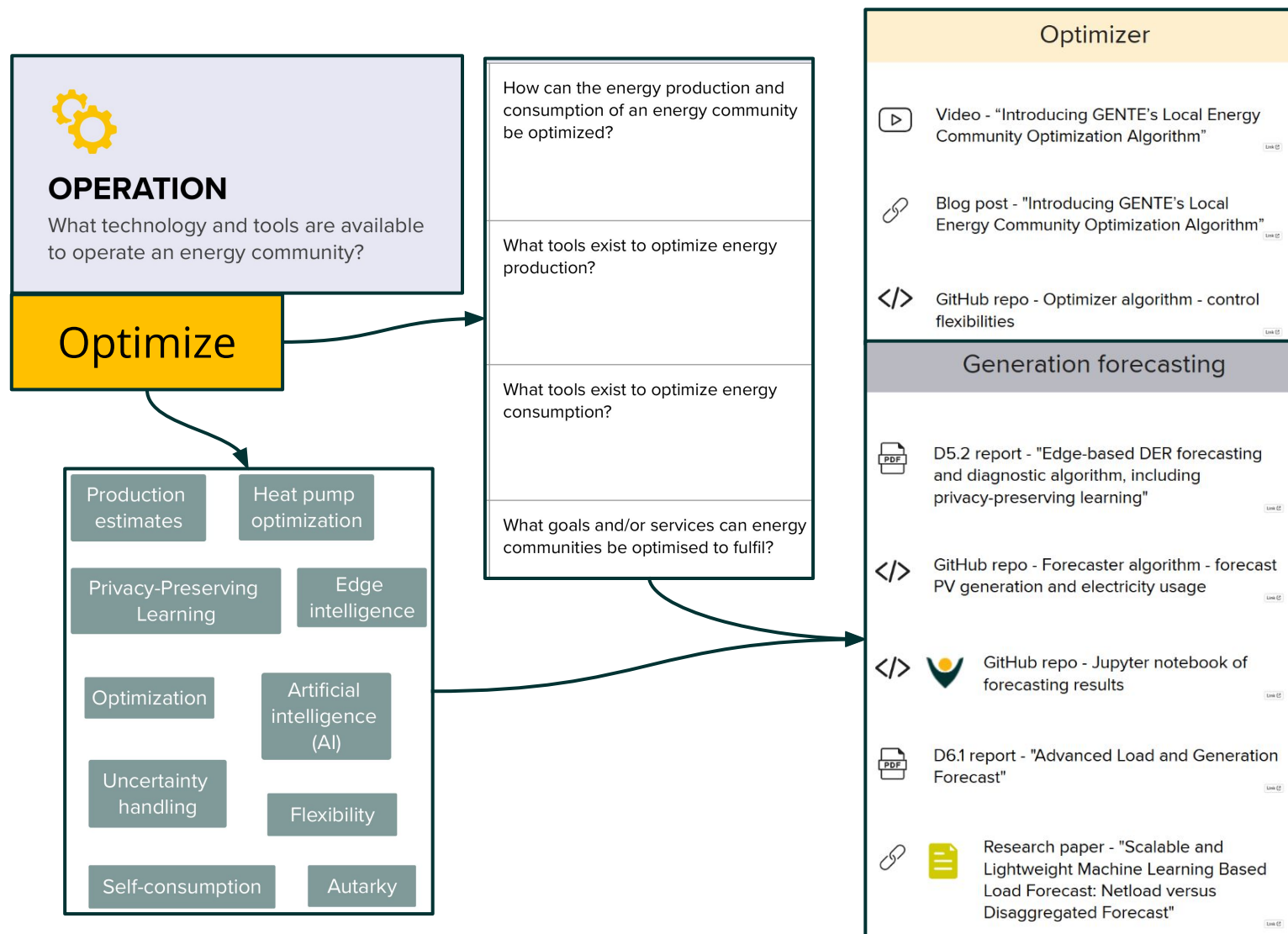
Management process

and results

eitner, Josephine Harris, Roman Lötscher
of Applied Sciences and Arts HSLU

www.genteproject.com
hello@genteproject.com

GENTE Toolkit - Use case: Optimize



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

Videos

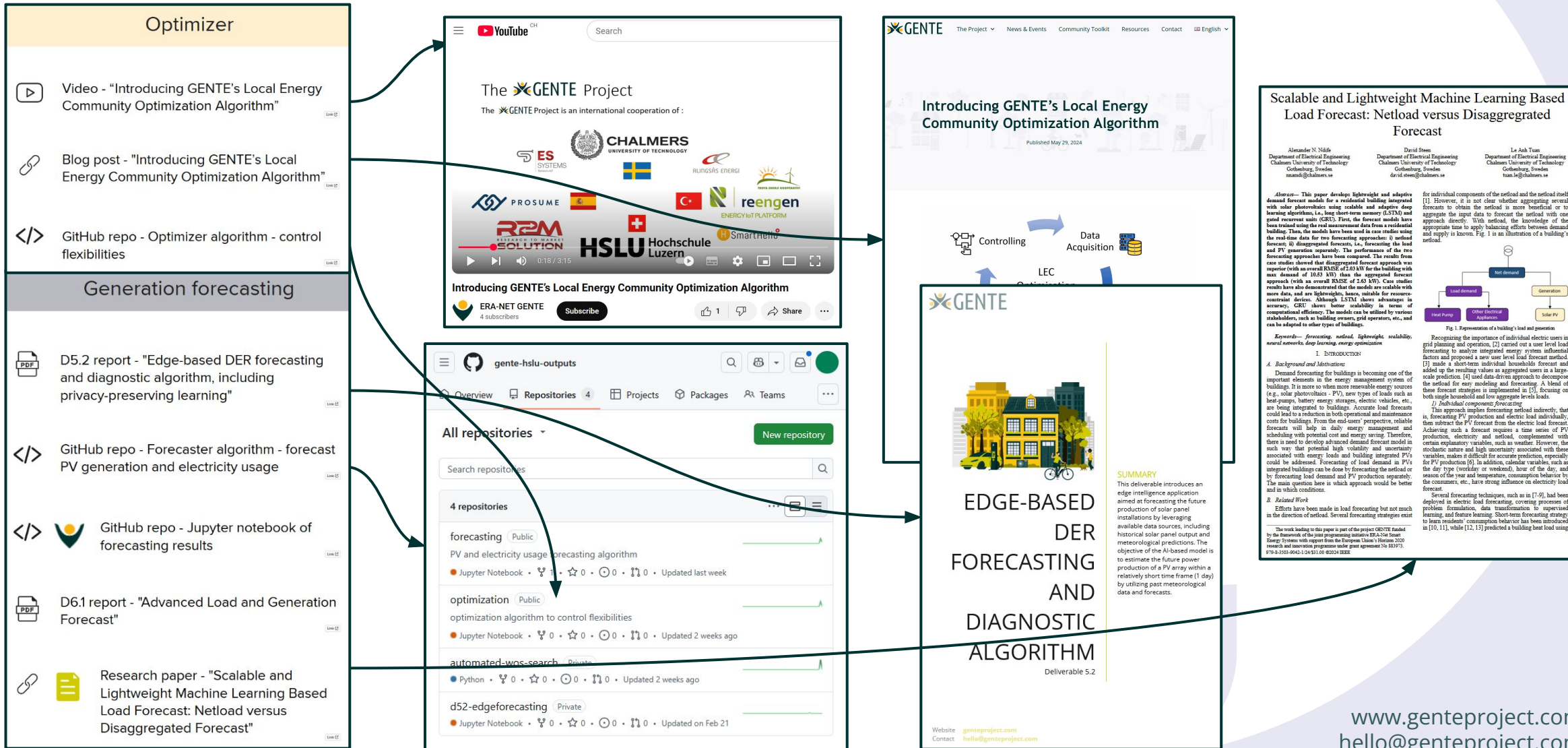
Blog posts & Articles

Code & data repositories

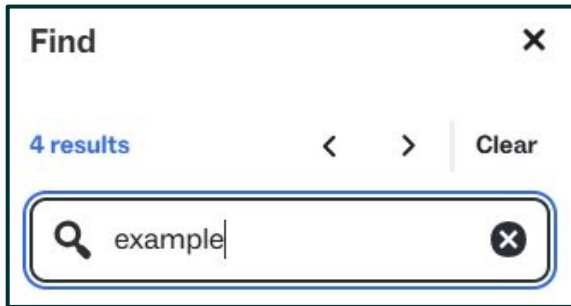
Reports

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?

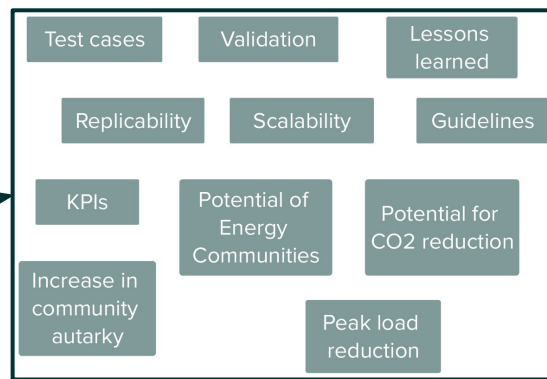
What are some examples of logical data models for LECs?

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

- Recommended citation for this guide:

Harris, Josephine. (2025). *Toolkit walkthrough: a HOW TO guide for GENTE toolkit users* [Guide]. Hochschule Luzern (HSLU). <https://genteproject.com/community-toolkit/>



This project has received funding in the framework of the joint programming initiative ERA-Net Smart Energy Systems' focus initiative Digital Transformation for the Energy Transition, with support from the European Union's Horizon 2020 research and innovation programme under grant agreement No 883973.