

## II IEA EBC Annex 83 Ph.D. Summer School

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Catania - June 12, 2023

**Francesco Guarino**

**IEA EBC Annex 83 Operating Agent**

# Welcome to the II Ph.D. summer school of IEA EBC annex 83!

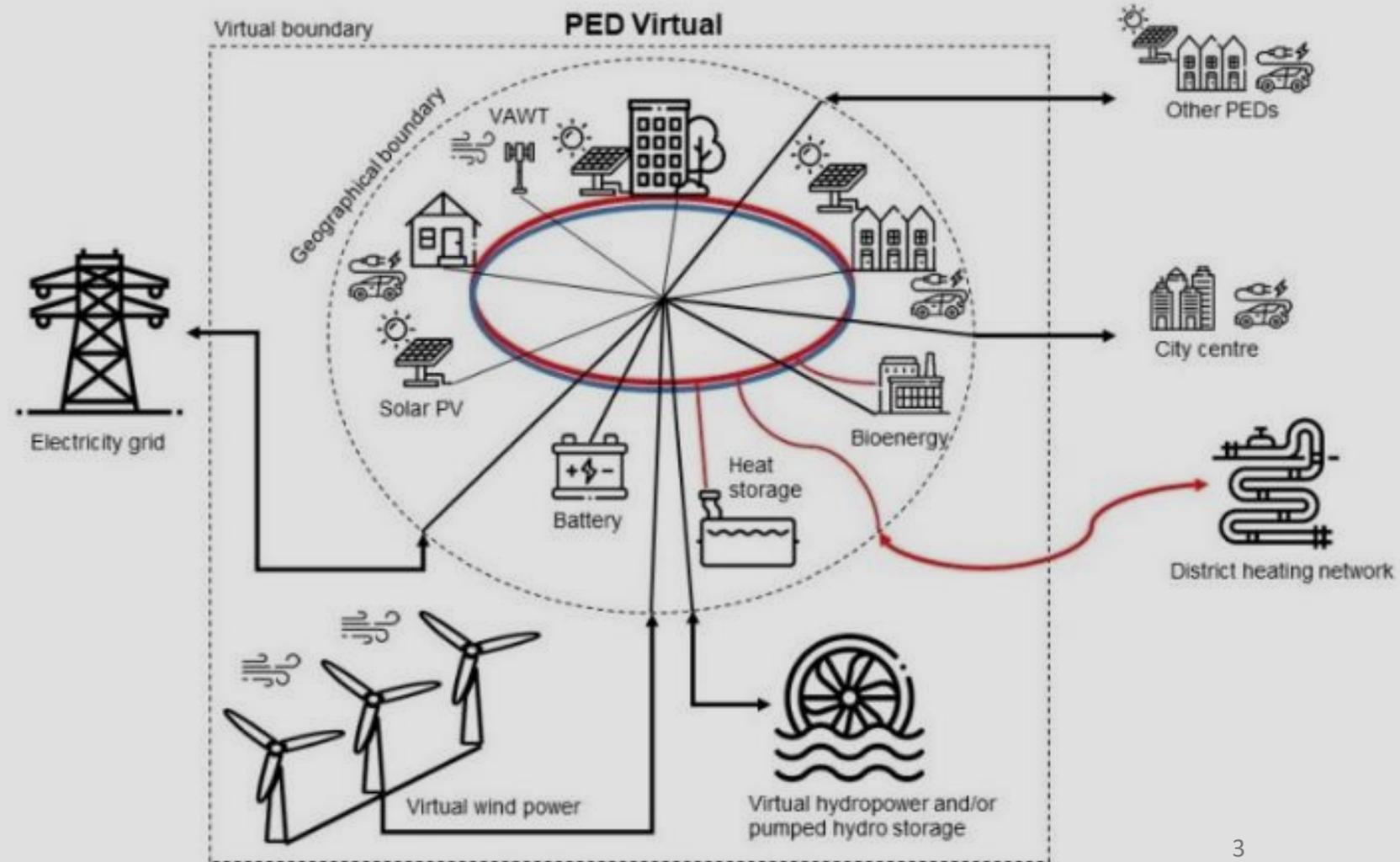
ANNEX 83



# Positive Energy Districts

“Energy-efficient and energy-flexible urban areas or groups of connected buildings which produce **net zero greenhouse gas emissions** and actively manage an annual local or regional **surplus** production of renewable energy. They require **integration** of different systems and infrastructures and **interaction between buildings**, the users and the **regional energy, mobility and ICT systems**, while securing the energy supply and a **good life** for all in line with social, economic and environmental **sustainability**.”

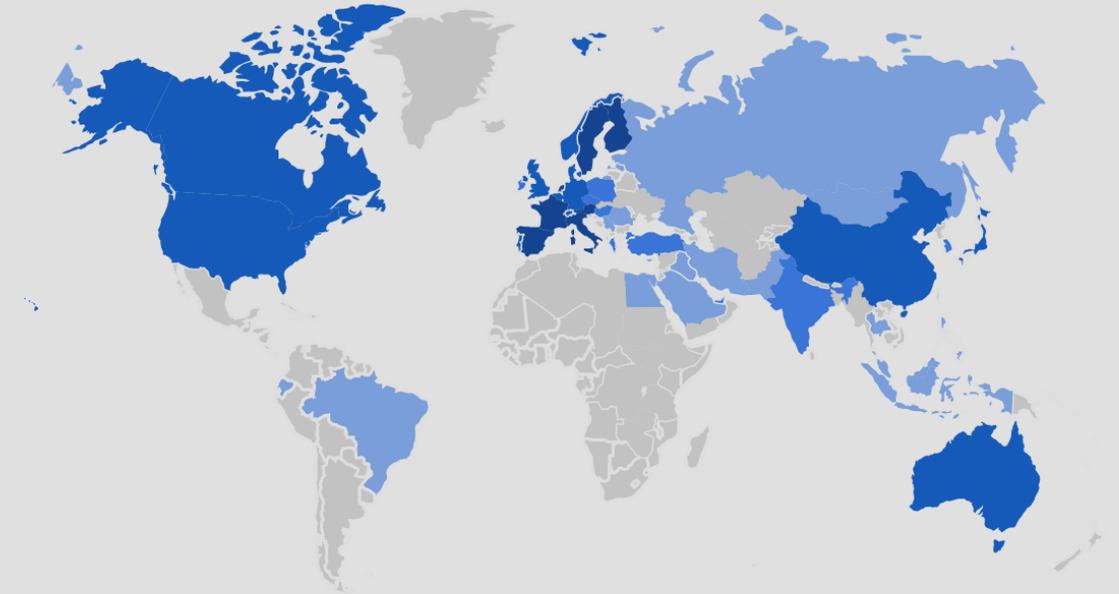
*Positive Energy Districts and Neighborhoods for Sustainable Urban Development, JPI Urban Europe*



# About Annex 83 - Positive energy districts

Since November 2020, the annex is an independent, international group of experts from around the world on the topic of **Positive Energy Districts** including more than 100 experts from the whole world.

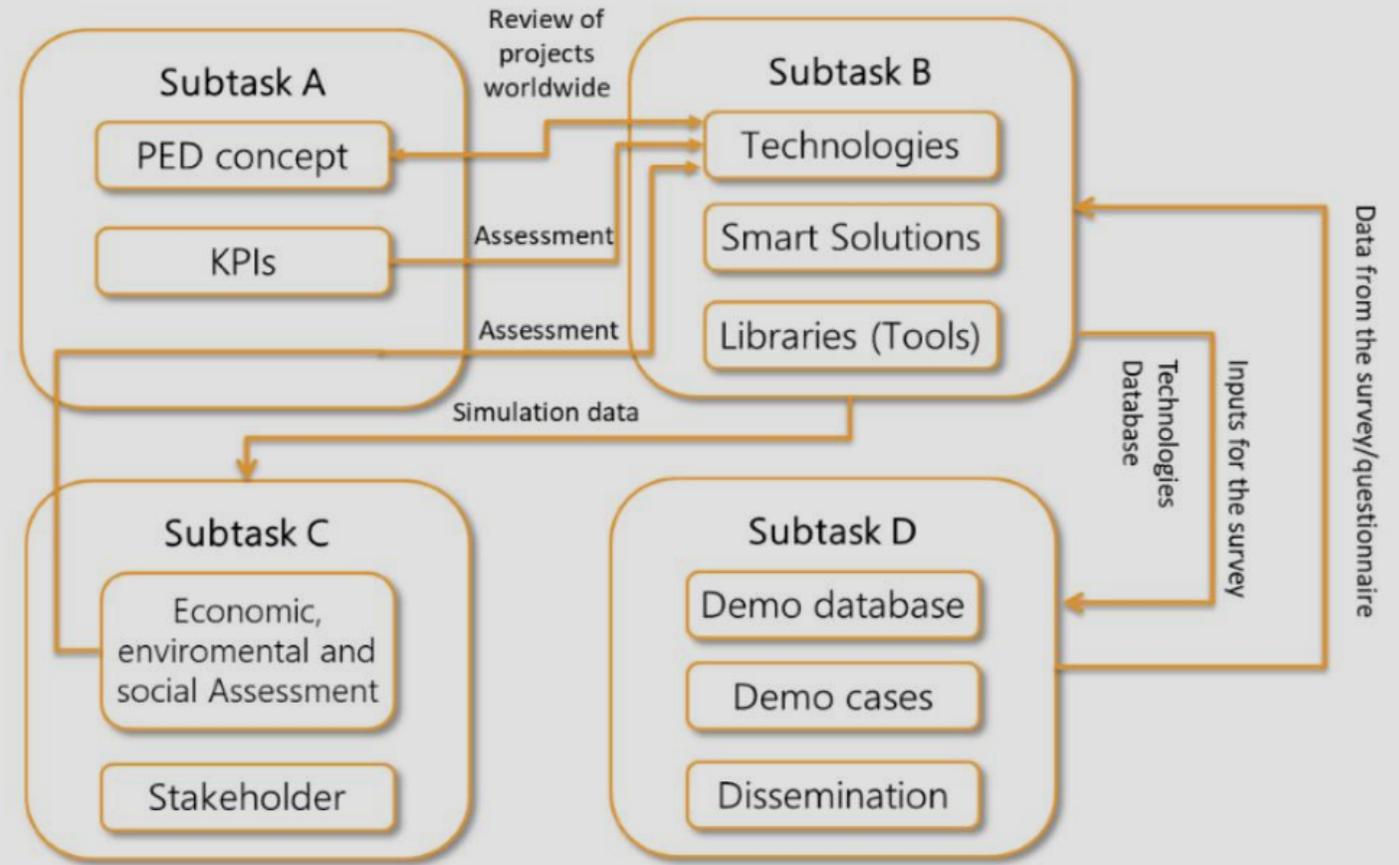
Among the activities of Annex 83 are developing an in-depth definition of PED (Positive Energy District), mapping technologies used and advance in the energy modeling of PEDs, planning tools and the decision-making process related to positive energy districts.



Annex 83 participants map. Source: Google Analytics Tool for Annex83 website.

# Annex 83 - Subtasks

- **Subtask A:** Definitions and context
- **Subtask B:** Methods, Tools and Technologies for Realizing Positive Energy Districts
- **Subtask C:** Organizing principles and impact assessment
- **Subtask D:** Demos, implementation and dissemination



# Annex 83 – Operating Agents



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# Annex 83 – Subtasks leaders



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**Xingxing Zhang**  
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**Andrea Gabaldon**  
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**Caroline Cheng**  
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SINTEF (Norway)  
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**Genku Kayo**  
Associate Professor,  
Tokyo City University (Japan)  
Subtask B leader

# Annex 83 – Subtasks leaders



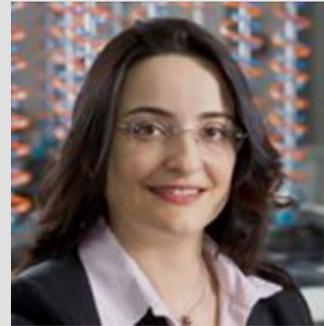
**Rosaria Volpe**  
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Subtask C leader



**Matthias Haase**  
Professor,  
Zurich University of Applied Sciences  
(Switzerland)  
Subtask D leader

- Contribution to the development of a common European **framework on PED** Definition led by JPI Urban Europe
- PED **Database** development in collaboration with CA PED-EU-NET, JPI UE and EERA-net at <https://pedeu.net/map/>
- Development of a **guideline for PED practitioners** (more than 50 national guidelines and scientific papers included and reviewed)
- Development of **assessment frameworks** for PEDs from the **sustainability** (environmental, social, economic) perspective
- **Database for technologies** and design solutions for PEDs in different climates and development of innovative tools for PED modeling at all stages of the design
- Database of **joint international PED data** for monitoring and energy simulation – PED database and library protocol
- Dissemination and education / **PhD networks**

## Aims:

- Facilitate the growth of our researchers in an international environment,
- Creating lasting connections among young researchers within Annex 83.

## Initiatives:

- Summer schools,
- PhD talks at every Experts' meeting,
- Exchanges and mobility among institutions within the Annex,
- Workshops and dissemination events,
- Joint publications.

# First IEA EBC Annex 83 PhD Summer school

## “Positive Energy Districts: Towards a holistic approach to modeling and performance assessment”

ANNEX 83



Group photo, Concordia University (Montreal, CA), 1-12 July 2022



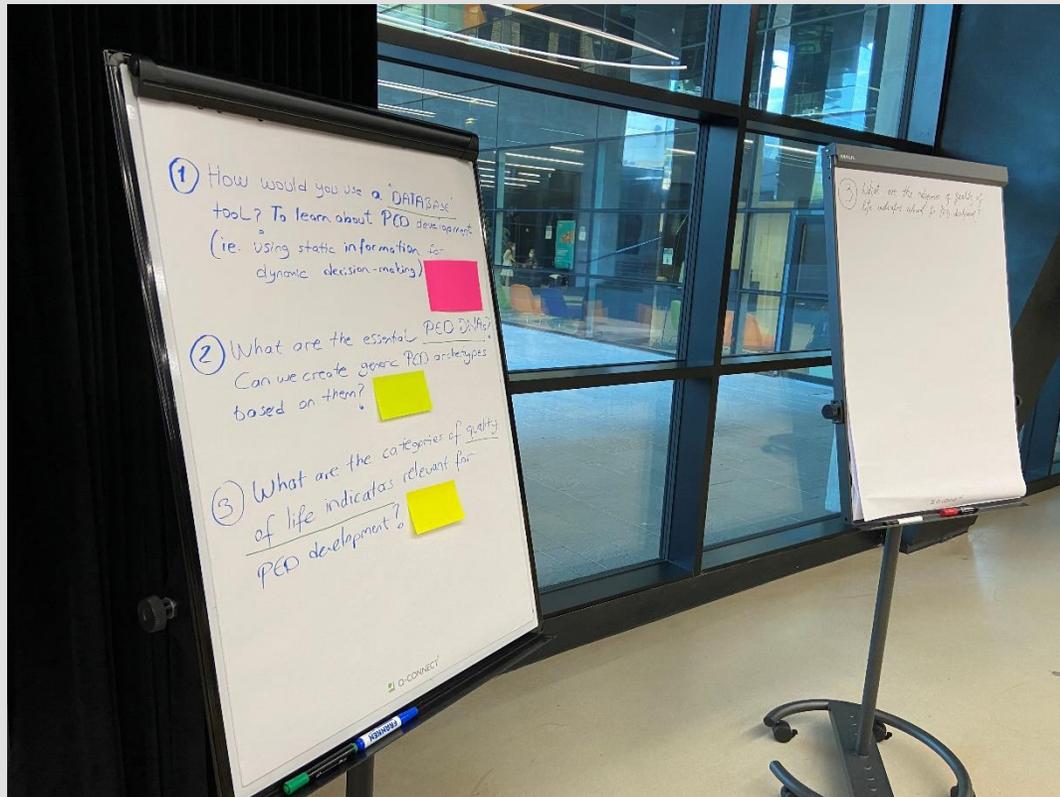
# Workshop “Sharing the experiences on Positive Energy Districts: Lessons learned from Annex 83“ Bozen, July 2022

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ANNEX 83



# IEA EBC Annex 83 experts' meeting in Palermo, April 11-14

ANNEX 83



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# Annex 83 working meeting, workshop and conference, Lausanne (Switzerland) 11-13 Sept 2023

ANNEX 83



## Positive Energy Districts - planning, design & interaction with stakeholders

13 September 2023, 16h15-18h00

*Positive Energy Districts (PED) are a key element in the EU planning for decarbonization of cities. Up to a hundred are being developed throughout the continent: a challenge both at the technical level and from an economic, environmental and social perspective.*

The basic principle of Positive Energy Districts (PEDs) is to create an area within city boundaries not only capable of generating more energy than consumed but also agile/flexible enough to respond to the variation of the energy market. The aim of this workshop is to gain a better understanding of the technologies, planning tools and decision-making processes involved in the creation of PEDs and to share know-how with local stakeholders based on experience and data from demonstration cases.

Moderation: IEA EBC Annex 83 "Energy Positive Districts", Prof. Matthias Haase, ZHWA

## • Objectives

- The aim of the workshop is gaining a better understanding of PEDs and sharing know-how with local stakeholders

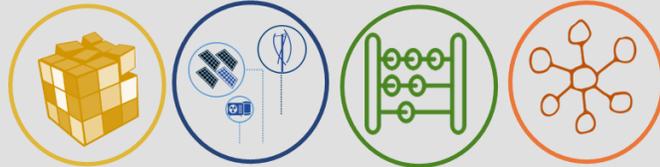
## • Topics

- Technologies, planning tools and planning and the decision-making process related to positive energy districts design, planning and operation.

• <https://cisbat.epfl.ch>

# How to join Annex 83?

ANNEX 83



- Contact your IEA EBC Executive Committee member. The contact details of the member countries can be found at the active link: <https://www.iea-ebc.org/contacts>,
- It is needed to get approval and a letter of participation from your country's IEA EBC Executive Committee member,
- For further information:  
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# Thanks!

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