

## Developing a Conceptual Framework for Participatory Visualization in Energy Decision-Making for Positive Energy Districts (PEDs)

### Just Positive Energy Planning Processes

Department: Copernicus Institute of Sustainable Development

Research group: Energy and Resources/Environmental Sciences

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### Project description

One of the biggest drivers of CO<sub>2</sub> emissions is the building sector. The United Nations (UN) Sustainable Development Goal (SDG) 7 aims to “ensure access to affordable, reliable, sustainable and modern energy for all.” As part of the Green Deal and Paris Agreement, low-carbon resilient urban development is needed, however not everyone can afford cutting edge sustainable solutions. The aim of this research project is to identify citizen centric solutions to achieve Positive Energy Districts. To empower disadvantaged or low income populations who are often excluded from policy incentives. Through this research, we seek to identify solutions for a just energy transition. One of the primary steps for this project is to create a comprehensive participatory visualization framework for energy decision-making, focusing on the use of advanced geospatial techniques (e.g: thermal drones) to support the development of positive energy transitions in disadvantaged neighborhoods. This work is an important prelude to engage stakeholders using advanced geospatial techniques.

The bright mind researcher will be supporting the JUST-PEPP project (<https://www.climatealliance.org/activities/just-pepp.html>). The researcher will be involved in extensive and systematic literature review, focusing on participatory visualization theories, thermal drone applications, and the principles of Positive Energy Districts (PEDs). This work will mainly identify gaps and best practices, resulting in a multi-layer framework that encompasses data collection, processing, visualization, engagement, and decision-making components. The researcher will finally develop a conceptual methodology to initiate a participatory visualization for building energy related decision-making. This work will offer the bright mind researcher an interdisciplinary exposure, systematic research skills, and collaborative opportunities in future phases involving stakeholder engagement and drone deployment.

### Job requirements

Ideal candidate will have:

- Familiar with geospatial analysis and tools
- Understanding and exposure of participatory planning and research
- Interested in learning about sustainable energy and scientifically reviewing literature
- Knowledge about ArcGIS/QGIS and participatory mapping tools is a plus
- Knowledge of Dutch language is a plus

The working schedule is very flexible, but the assistant can expect in person meetings at the beginning, at the end and somewhere mid time of the project. We will also have a status meeting every two weeks, which could be in person or online. Working days and hours can be agreed to fit the personal agenda of the assistant.