

## Energy balance calculation for positive energy districts: A Review of the status quo and challenges

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The strategic vision of creating 100 Positive Energy Districts (PEDs) across Europe by 2025 is compelling. PEDs are seen as one of the key drivers for the urban energy transformation. The PED concept is evolving and in recent years, there has been a growing number of PED-oriented initiatives and projects especially in Europe. While these PED projects may share some common values and goals, there is not a common PED definition. Several EU organisations or programmes established their own PED definitions, but these definitions are primarily qualitative description in nature. They are often overly general and thus, open to interpretation. As a result, different PED projects set different baselines, which makes it difficult for comparison.

There is a call for a common European PED definition and within which, a clear quantitative method for assessing PEDs. A core part of the quantitative method concerns the energy balance calculation as a positive balance is a distinctive characteristic of PEDs. This paper presents a review of the energy balance calculation methods used in existing PED-relevant projects. By drawing similarities and finding discrepancies between

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the methods, the paper aims to identify the gaps in existing work. It will discuss the challenges in developing a common calculation method and conclude by outlining possible ways forward. The outcome of this work will shed light on the development of a common PED definition, particularly on the setting of tangible criteria, which represents a crucial step towards the PED vision.