



Engineering Advance

Answer to the letter - Measuring energy poverty and energy vulnerability

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The concept of energy poverty covers multiple interrelated issues and there is no single one-fits-all framework. The discussed systematic literature review on the measurement of the energy poverty with manifestations in various regions of the world (Siksnylyte-Butkiene et al., 2021) showed that there have been two pillars, namely energy access and energy affordability. A more comprehensive understanding of the energy poverty was proposed by the United Nations (2000), where energy poverty is characterized as inability to obtain required amount and high-quality energy that is affordable, safe, and environmentally friendly. This modern understanding was followed in the study by Siksnylyte-Butkiene et al. (2021), where integrity of energy poverty indicators sets and indices were assessed.

The comprehensive analysis of integrity of energy poverty indicators and indices was carried out following the concept of sustainable development. The framework for the assessment was developed following the Bellagio STAMP principles, which provide essential recommendations for the process of indicators selection and assessment. The assessment, in this case, focuses on the ability of the indicators to fully reflect the intended sustainability issues.

The assignment of the energy poverty indicators to one or another dimension of energy poverty is often arbitrary as, at least for some indicators, this can be done depending on the (subjective) interpretation. Despite that, the entire assessment in Siksnylyte-Butkiene et al. (2021) was performed following the same methodological approach. After the analysis of numerous studies in the field, it was concluded that the social dimension generally covers indicators related to wellbeing of people and their ability to attain adequate level of socially and materially necessary level of energy services. Mainly, social dimension relates to such aspects as socio-economic and demographic household characteristics, thermal

comfort characteristics, health aspects (indoor and outdoor pollution), households' behaviour, presence of social policy actions, among others (Kyprianou & Serghides, 2020; Siksnylyte-Butkiene et al., 2021; Siksnylyte-Butkiene, 2021).

The Global Energy Vulnerability Index proposed by Gatto and Busato (2020) is based on the twelve indicators. However, Gatto and Busato (2020) did not explicitly explain which indicators (according to the authors) belong to one or another dimension of energy poverty and why. Despite that, as it was mentioned before, the integrity of energy poverty indicators was measured based on developed methodology. However, we agree, that a wider discussion on the dimensions of energy poverty is necessary to clarify the assignment of specific indicators to these dimensions.

Declaration of Competing Interest

None.

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