# Measuring energy footprint in bottom-up energy transitions in the Basque Country

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Different sustainable intentional communities, rural villages and sustainable urban neighborhoods are trying to shift to the energy sovereignty, creating their own bottom-up energy transitions.

This research is an effort towards measuring the hidden energy flows of these communities, embodied in goods and services that are being consumed from both the national and international energy trade exchanges.

Currently, hidden energy flows between countries have been calculated and brought into discussion in the scientific community. Thus, when creating top-down national energy transition strategies, is nowadays easier to identify the embodied energy of whole countries. Nevertheless, in bottom-up initiatives, the dependencies with national welfare and productive systems are difficult to estimate, and have not been normally measured. This research provides the insights to start calculating the dependencies of local realities with national ones using Multiregional Input-Output methodology.

The analysis has been developed in three different bottom-up energy transition initiatives of the Basque Country, and compared with both the national and regional realities. The results could help these small initiatives to boost their energy sovereignty.