

# Quantifying Biogas Plant Externalities Using Well-Being and Hedonic Price Data

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## **Abstract:**

This paper quantifies the negative external effects of biogas plants using well-being data and hedonic price data. We combine a new panel data set comprising more than 13,000 installations in Germany with rich longitudinal household data from the German Socio-Economic Panel for the period 2000 to 2012. Our empirical strategy rests on a difference-in-differences design exploiting exact geographical coordinates of both installations and households. Propensity-score and spatial matching ensures comparability of the treatment and control group. Results show that the construction of biogas plants closer than 750 metres to households has significant negative impacts on the well-being of household members as well as on real estate prices. The quantified negative externality, however, is rather small: about 100 Euro per affected household per year.