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How does the 2025 German Biomass Package affect the economic viability and system integration of small-scale, manure-based biogas plants?

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Extended Abstract

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Abstract Summary

This study evaluates the post-EEG viability of 150 kW manure-based biogas plants. By leveraging the 2025 Biomass Package and the GHG-manure quota, these units can transition into highly flexible stabilization units. Results show that combining the €100/kW flexibility surcharge with strategic peak-price dispatch and emission certificates secures competitiveness and provides critical energy during Dunkelflaute periods.

Presenting Author Biography

Sina Barthel is a research scientist at the DBFZ German Biomass Research Centre in Leipzig. As part of the Biomass in the Energy System working group, she specializes in the techno-economic assessment of bioenergy concepts. Her research focuses on the flexibilization of biogas plants, electricity market modeling, and the integration of GHG quotas and emissions trading (ETS). She develops strategic solutions to ensure the post-EEG competitiveness of decentralized plants through smart market integration and regulatory frameworks like the 2025 Biomass Package, positioning biomass as a reliable, dispatchable power source for a climate-neutral energy system.