

Are Green Electricity Labels Misleading? Evidence on Consumer Awareness and Preferences for Temporal Coupling

European consumers purchase green electricity tariffs in the belief that they receive their electricity from renewable generation. Providing green electricity, however, can be claimed by offsetting production from conventional sources with Guarantees of Origin (GOs), certificates issued for renewable energy production. GOs are valid for up to one year after issuance, allowing for a temporal decoupling between green electricity production and consumption. This study investigates whether German retail consumers are aware of this decoupling and how such awareness influences their willingness to pay (WTP) for green electricity. We surveyed over 1,000 German households in December 2024 using a stated-choice experiment with randomized information treatments.

Our findings reveal three key insights: First, more than 80% of consumers are unaware of the temporal decoupling of green electricity. Second, informing consumers about this feature decreases their WTP, with the decrease becoming significant for the subgroup expressing definite certainty in their responses. Third, the reduction in WTP is most pronounced when informed households are compared to those who implicitly assumed close temporal coupling.

The paper presents some of the first empirical evidence on household preferences for the temporal coupling of consumption and production in green electricity contracts. Without clear information on electricity sourcing, the market may experience information failure. These findings can inform electricity retailers and policymakers, particularly when implementing the European Union's Green Claims Directive taking effect in 2026.