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## Estimation Method for the Creation of Hydrogen Stations with Woody Biomass and Livestock Excreta in Japan

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### Abstract

*It was determined that woody biomass and livestock excreta can be utilized as hydrogen resources, and hydrogen produced from such sources can be used to fill fuel cell vehicles (FCVs) at hydrogen stations. It was shown that the biomass transport costs for hydrogen production may be reduced by as much as 20% of the costs for co-generation. In the Tokyo Metropolitan Area, there are only a few sites capable of producing hydrogen from woody biomass in amounts greater than 200 m<sup>3</sup>/h—the scale required for a hydrogen station to be operationally practical. However, in the case of livestock excreta, it was shown that 15% of the municipalities in this area are capable of securing sufficient biomass to be operationally practical for hydrogen production. The differences in feasibility of practical operation depend on the type of biomass. Furthermore, it was also shown that the method of hydrogen production from livestock excreta can be economically feasible with the effect on reduction of CO<sub>2</sub> emission in the future.*

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