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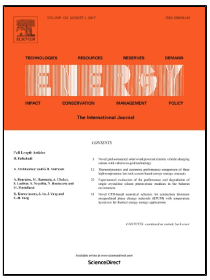

Are the off-grid customers ready to pay for electricity from the decentralized renewable hybrid mini-grids? A study of willingness to pay in rural Bangladesh

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Are the off-grid customers ready to pay for electricity from the decentralized renewable hybrid mini-grids? A study of willingness to pay in rural Bangladesh

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Abstract:

Off-grid rural and remote area electrification through decentralized renewable hybrid mini-grids (HMG) has been prioritized in the recent national renewable energy policy of Bangladesh. Research was carried out to explore the actual customer willingness to pay (WTP) for the electricity to be supplied by such HMGs, while considering a wide spectrum of socioeconomic factors. Door to door household survey was conducted using structured questionnaire to collect respondent data in December 2015 from six off-grid villages under three different administrative districts. Wide variations in current cost of kerosene based lighting and expected load demand were observed among different income groups. Average monthly cost of lighting ranged between USD 3.0 to USD 9.24 and expected electricity usages as 3.60kWh and 33.76kWh. Families with higher income showed least mean satisfaction with kerosene lighting. However, strong mean willingness to switch HMG has been identified regardless of income status. The dichotomous choice contingent valuation method (CVM) was applied for this purpose. The maximum WPT value (USD 0.432/kWh) identified here indicates that a sustainable tariff model can be applied for attracting private investment in this sector.

Keywords: Off-grid electrifications, Hybrid mini-grids, Willingness to Pay, Contingent valuation method, Sustainable tariff

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Conflicts of Interest
The authors declare no conflict of interest.