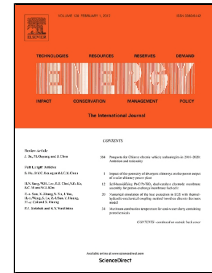


# Accepted Manuscript

Optimal sizing of stand-alone photovoltaic systems in residential buildings

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1 **Highlights**

- 2 A new stand-alone PV system sizing model based on integer programming is proposed.
- 3 Hourly solar radiation and ambient temperature data are used.
- 4 The model yields the optimal number of PV modules and batteries to install.
- 5 The model is applied to a case study in Nigeria.
- 6 The model is an effective sizing tool for PV system installers and policy makers.

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