

Supplementary Material

Table S1. Nomenclature

ρ	Density, kg/m ³ .
A	Coefficient.
C	Thermal capacitance, J/°C.
c_p	Specific heat capacity, J/kg-°C.
E	Energy capacity of the battery, kWh.
EIR	Energy input ratio, w/w .
$EIRMod$	Modifier for HVAC EIR.
G	Received solar irradiance, W/m ² .
P_C	Power charged from the battery, W.
P_D	Power discharged from the battery, W.
P_{PV}	Output power from PV, W.
P_R	Power rating of PV, W.
Q	Heat, W.
$QMod$	Modifier for HVAC capacity.
R	Thermal resistance, °C/W.
SOC	State of charge, %.
T	Temperature, °C
t	Time, s.
\dot{V}	Volume flow rate, m ³ /s.
v	Velocity, m/s.

To gain access to the models, test-bed code, the application software, and data (test results), please contact ozmeno@ornl.gov.