Appendix

Simulation Parameters

Table I
Simulation parameters of MGs

Symbol	Parameter	Value
$P_t^{pv,\max}$	Maximum generation of PV	1200 kWh
$P_t^{shp,\max}$	Maximum generation of SHP	1200 kWh
$E^{ess,\max}$	Maximum capacity of ESS	1200 kWh
$E^{ev,\max}$	Battery capacity of EV	15 kWh
$P^{hvac,\max}$	Maximum power rate of HVAC	1.75 kW
$SoC^{ev,\max}$	Maximum state of charge of EV	100%
$SoC^{ess,\max}$	Maximum state of charge of ESS	100%
$DoD^{ev,\max}$	Maximum depth of discharge of EV	80%
$DoD^{ess,\max}$	Maximum depth of discharge of ESS	80%
η^{evc}/η^{evd}	Charging/discharging efficiency of EV	0.93
$\eta^{essc}\ \eta^{essd}$	Charging/discharging efficiency of ESS	0.95
$\eta^{pv}\ \eta^{shp}$	Conversion efficiency of PV/SHP	0.9
η^{hvac}	Heating efficiency of HVAC	2.2
$\Theta^{in,\min}$	Minimum indoor temperature	19 °C
$\Theta^{in,\max}$	Maximum indoor temperature	26 °C
C^{hvac}	Thermal capacity of HVAC	0.33 kWh/°F
R^{hvac}	Thermal resistance of HVAC	13.5 °F/kW
$J_1^{i\in\mathcal{I}_{n\in\{1,2,3\}}}$	The first flexible demand	(2.5 kW, 2)
$J_2^{i\in\mathcal{I}_{n\in\{1,2,3\}}}$	The second flexible demand	(1.75 kW, 3)
$J_3^{i\in\mathcal{I}_{n\in\{2,3\}}}$	The third flexible demand	(5.0 kW, 4)