The IES parameters are mainly taken from [1], [2] and [3], which are shown as follows:

TAB. A1 PARAMETERS OF EQUIPMENT

$P_{dg}^{min}/P_{dg}^{max}$(kW)	P_{CHP}^{min} / P_{CHP}^{max}(kW)	$P_{p,e}^{min}/P_{p,e}^{max}$(kW)	$P_{s,e}^{min}/P_{s,e}^{max}$(kW)	$G_{p,g}^{min}/G_{p,g}^{max}$($m^3$)	$H_{EB}^{min}/H_{EB}^{max}$(kW)	$H_{GF}^{min}/H_{GF}^{max}$(kW)
0/3500	0/3000	-3000/3000	-3000/3000	0/5000	0/1000	0/2000
$P_{CH}^{max}/P_{DC}^{max}$(kW)	SOC_e^{min} / SOC_e^{max}	η_e^{CH} / η_e^{DC}	$H_{CH}^{max}/H_{DC}^{max}$(kW)	SOC_h^{min} / SOC_h^{max}	η_h^{CH} / η_h^{DC}	$SOC_e(0)$/ $SOC_h(0)$(kW)
1200/1200	200/2000	0.96/0.96	750/750	150/1500	0.9/0.9	800/600
r_{dg}^{down} / r_{dg}^{up}(kW)	r_{CHP}^{down} / r_{CHP}^{up}(kW)	$GHV\eta_{CHP-E}$	$GHV\eta_{GF}$	η_{EB}	r	q(kW)
2100/2100	1800/1800	2.5	8	0.95	*0.8*	100

TAB. A2 PRICE PARAMETERS

b_{dg}(¥)	c_{dg}(¥)	b_{EES}(¥)	c_{EES}(¥)	b_{TES}(¥)	c_{TES}(¥)	γ_{int} (¥)
1.0	0	0.1	2	0.1	0	1.5
C_{rdg}^{up}(¥)	C_{rdg}^{down}(¥)	C_{rCHP}^{up}(¥)	C_{rCHP}^{down}(¥)	C_{rch}^{up}(¥)	C_{rEES}^{up}(¥)	C_{rEES}^{down}(¥)
0.2	0.2	0.2	0.2	0.2	0.2	0.2

TAB. A3 PARAMETERS OF RENEWABLE GENERATION

P_{WT}^{max}(kW)	P_{PV}^{max} (kW)	v_{in}(m/s)	v_{out}(m/s)	v_{rate}(m/s)	σ_L
3000	3000	4	12	20	0.05

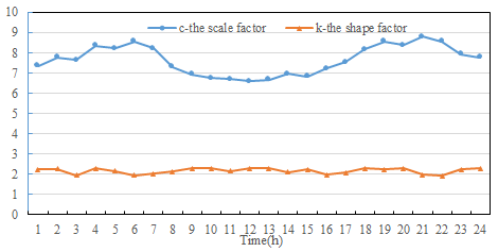

Fig. A1 The scale and shape factor of wind speed

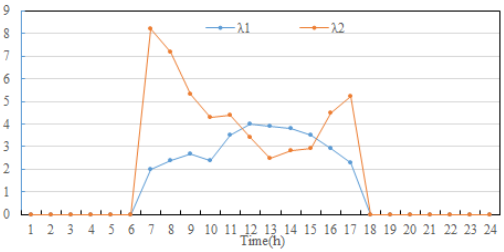

Fig. A2 The shape factors of photovoltaic

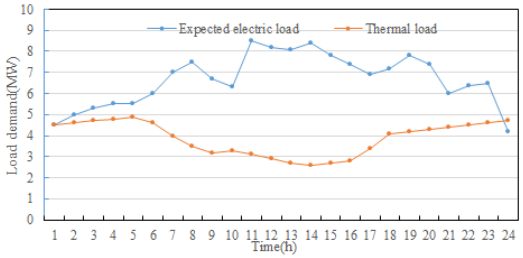

Fig. A3 The electric and thermal load demand

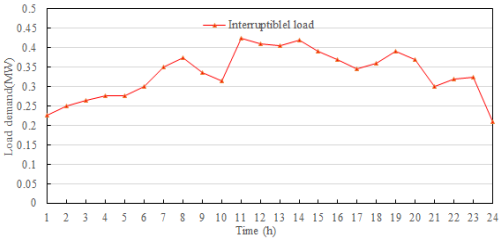

Fig. A4 The maximum interruptible load

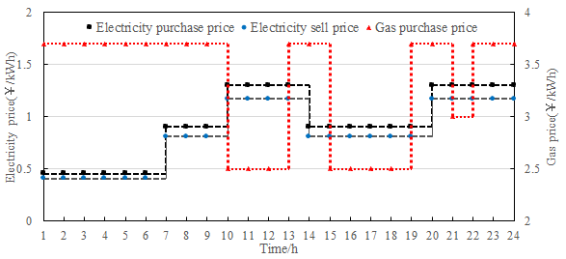

Fig. A5 Daily energy purchase and sell price

[1] Y. Wang, Y. Huang, Y. Wang, et al., "Optimal Scheduling of the Regional Integrated Energy System based on energy price Demand Response," *IEEE Trans. Sustain. Energy*, to be published.

[2] M. Lu, S. Lou, J. Liu, Y. Wu and Z. Wang, "Coordinated Optimization of Multi-type Reserve in Virtual Power Plant Accommodated High Shares of Wind Power," *Proceeding of CSEE*, vol. 38, no. 10, pp. 2874-2882, May. 2018.

[3] M. Zhou, S. Xia, Y. Li and G. Li, ", A Joint Optimization Approach on Monthly Unit commitment and Maintenance Scheduling for Wind Power Integrated Power Systems" *Proceeding of CSEE*, vol. 35, no. 7, pp. 1586-1594, Apr. 2015.