A . System Settings

The 8 fundamental units are presented in Table I. The composition of different systems is shown in Table II.

	unit1	unit2	unit3	unit4	unit5	unit6	unit7	unit8
β	16.19	17.26	16.6	16.5	19.7	22.26	27.74	25.92
α	1000	970	700	680	450	370	480	660
$\underline{P}$	150	150	20	20	25	20	25	10
$\overline{P}$	455	455	130	130	162	80	85	55
$\underline{T}_{on}$	8	8	5	5	6	3	3	1
$\underline{T}_{off}$	8	8	5	5	6	3	3	1
C_{cold}	9000	10000	1100	1120	1800	340	520	60
C_{hot}	4500	5000	550	560	900	170	260	30
$\underline{T}_{cold}$	5	5	4	4	4	4	2	0
P_{up}	225	225	50	60	50	60	60	45
P_{down}	225	225	50	60	50	60	60	45
P_{start}	150	150	20	20	25	20	25	10
P_{shut}	150	150	20	20	25	20	25	10

TABLE I 8 fundamental units and parameters

system scale	unit1	unit2	unit3	unit4	unit5	unit6	unit7	unit8
60	8	8	8	8	7	7	7	7
80	10	10	10	10	10	10	10	10
132	45	45	8	0	5	0	12	16
1080	260	240	100	140	40	100	80	120

TABLE II System basic composition

B . Input features

Features for *Neural Initial Commitment Prediction* policy as shown in TABLE IIIIII. While the features for the *Neural neighborhood Prediction* policy were added a little bit on this basis, as shown in TABLE IIV.

Component	Feature Description
Variable	normalized coefficient of variables in the objective function
	degree of variable node in the bipartite representation
	average coefficient of the variable in all constraints
	maximum value among all coefficients of the variable
	minimum value among all coefficients of the variable
	binary representation to show if the variable is a commitment variable
	LP solution of the variable
Constrain	average of all coefficients in the constraint
	degree of constraint nodes in the bipartite representation
	right-hand-side value of the constraint
	binary representation to show if the constraint is an equation constraint

TABLE IIIII Input features for Neural Initial Commitment Prediction policy

Component	Feature Description
Variable	normalized coefficient of variables in the objective function
	degree of variable node in the bipartite representation
	average coefficient of the variable in all constraints
	maximum value among all coefficients of the variable
	minimum value among all coefficients of the variable
	binary representation to show if the variable is a commitment variable
	binary representation to show if the variable is a binary variable
	incumbent solution of the variable
	Lower bound of the variable
	upper bound of the variable
	binary representation of solution value equals lower bound
	binary representation of solution value equals upper bound
	Minimum value between upper bound–solution and solution–lower bound
	Value in incumbent
Constrain	average of all coefficients in the constraint
	degree of constraint nodes in the bipartite representation
	right-hand-side value of the constraint
	binary representation to show if the constraint is an equation constraint
	dual solution of the constraint
	slack value of the constraint

TABLE IIV Input features for Neural neighborhood Prediction policy