

Appendix-C

Small size ADN:

Expectation of load profile at each time is listed in Table C1. Expectation of RES is listed in Table C2. The forecasting errors of demand load, the error between actual RES output and its expectation value is assumed to follow the normal distribution $N(0,0.03^2)$ and $N(0,0.1^2)$, respectively.

Table C1 Expectation of demand load

Time-slot	1	2	3	4	5	6
$P_i^D(t)$ (kW)	720.29	780.31	840.34	870.35	876.35	840.34
$Q_i^D(t)$ (kVAR)	360.14	390.16	420.17	435.18	438.18	420.17
Time-slot	7	8	9	10	11	12
$P_i^D(t)$ (kW)	780.31	757.50	753.90	744.30	739.50	737.10
$Q_i^D(t)$ (kVAR)	390.16	378.75	376.95	372.15	369.75	368.55
Time-slot	13	14	15	16	17	18
$P_i^D(t)$ (kW)	732.30	720.29	660.26	540.22	480.19	420.17
$Q_i^D(t)$ (kVAR)	366.15	360.14	330.13	270.11	240.10	210.08
Time-slot	19	20	21	22	23	24
$P_i^D(t)$ (kW)	450.18	510.21	570.23	600.24	660.26	690.28
$Q_i^D(t)$ (kVAR)	225.09	255.10	285.12	300.12	330.13	345.14

Table C2 Expectation of maximum output of RES

Time-slot	1	2	3	4	5	6
$P_i^{RES}(t)$ (kW)	100	150	250	300	320	350
Time-slot	7	8	9	10	11	12
$P_i^{RES}(t)$ (kW)	320	300	250	140	100	150
Time-slot	13	14	15	16	17	18
$P_i^{RES}(t)$ (kW)	150	170	150	200	220	260
Time-slot	19	20	21	22	23	24
$P_i^{RES}(t)$ (kW)	300	320	330	220	200	100

Medium size ADN:

Expectation of load profile at each time is listed in Table C3. Expectation of RES is listed in Table C4. The forecasting errors of demand load, the error between actual RES output and its expectation value is assumed to follow the normal distribution $N(0,0.03^2)$ and $N(0,0.1^2)$, respectively.

Table C3 Expectation of demand load

Time-slot	1	2	3	4	5	6
$P_i^D(t)$ (kW)	1350.54	1463.09	1575.63	1631.91	1643.16	1575.63

$Q_i^D(t)$ (kVAR)	675.27	731.54	787.82	815.96	821.58	787.82
Time-slot	7	8	9	10	11	12
$P_i^D(t)$ (kW)	1463.09	1420.32	1413.57	1395.56	1386.56	1382.06
$Q_i^D(t)$ (kVAR)	731.54	710.16	706.79	697.78	693.28	691.03
Time-slot	13	14	15	16	17	18
$P_i^D(t)$ (kW)	1373.06	1350.54	1238.00	1012.91	900.36	787.82
$Q_i^D(t)$ (kVAR)	686.53	675.27	619.00	506.45	450.18	393.91
Time-slot	19	20	21	22	23	24
$P_i^D(t)$ (kW)	844.10	956.64	1069.19	1125.45	1238.00	1294.28
$Q_i^D(t)$ (kVAR)	422.05	478.32	534.59	562.73	619.00	647.14

Table C4 Expectation of maximum output of RES

Time-slot	1	2	3	4	5	6
$P_i^{\text{RES}}(t)$ (kW)	40	60	100	120	128	140
Time-slot	7	8	9	10	11	12
$P_i^{\text{RES}}(t)$ (kW)	128	120	100	56	40	60
Time-slot	13	14	15	16	17	18
$P_i^{\text{RES}}(t)$ (kW)	60	68	60	80	88	104
Time-slot	19	20	21	22	23	24
$P_i^{\text{RES}}(t)$ (kW)	120	128	132	88	80	40