1) Comparison between MPCOPF and MPDOPF: In this section, comparative analyses are carried out between MPCOPF and MPDOPF considering 5-hour time steps.

TABLE I: Comparative analyses between MPCOPF and MPDOPF - 20% PVs and 30% Batteries for a 5-hour

Metric	MPCOPF	MPDOPF
Line loss (kW)	75.99	76.12
Substation real power (kW)	4308.28	4308.14
Substation reactive power (kVAR)	574.18	656.24
PV reactive power (kVAR)	116.92	76.01
Substation power cost ($)	576.31	576.30
Number of Iterations	1	5
Total Simulation Time (s)	521.25	49.87

Further, here the

TABLE II: ACOPF feasibility analyses - 20% PVs and 30% Batteries for a 5-hour Horizon

Metric	MPDOPF	OpenDSS
Full horizon		
Line loss (kW)	76.12	76.09
Substation real power (kW)	4308.14	4308.35
Substation reactive power (kVAR)	656.24	652.49
Max. all-time discrepancy		
Voltage (pu)	0.0002	
Line loss (kW)	0.0139	
Substation power (kW)	0.3431	

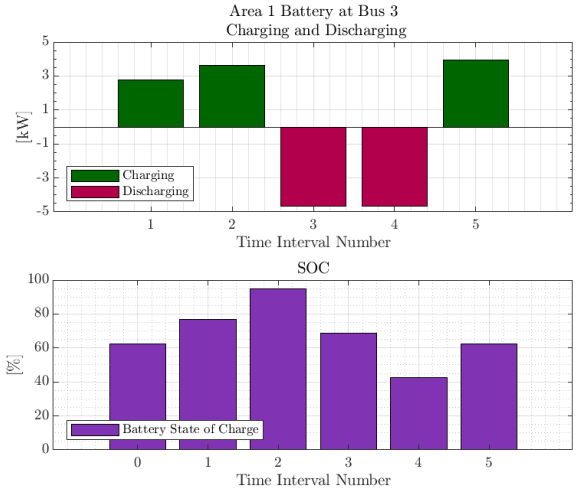

Fig. 1: Charging-Discharging and SOC graphs for Battery at Bus 3 located in Area 1 obtained via MultiPeriodENApp

Boundary Variable Plots are too tall, make them slightly shorter, like 25% of the page only.

2) Scalability Analysis:

3) Comparison between MPCOPF and MPDOPF: In this section, comparative analyses are carried out between MPCOPF and MPDOPF considering 10-hour time steps with 20% PV penetration and 30% battery penetration.

Do you want PV Real Power in the table too? (Not controllable, so nothing to compare)

Further, here the

TABLE III: Comparative analyses between MPCOPF and MPDOPF - 20% PVs and 30% Batteries for a 10-hour Horizon

Metric	MPCOPF	MPDOPF
Line loss (kW)	148.67	148.94
Substation real power (kW)	8544.28	8544.04
Substation reactive power (kVAR)	1092.39	1252.03
PV reactive power (kVAR)	222.59	139.81
Substation power cost ($)	1197.87	1197.87
Number of Iterations	1	5
Total Simulation Time (s)	4620.73	358.69

TABLE IV: ACOPF feasibility analyses - 20% PVs and 30% Batteries for a 10-hour Horizon

Metric	MPDOPF	OpenDSS
Full horizon		
Line loss (kW)	148.94	148.87
Substation real power (kW)	8544.04	8544.40
Substation reactive power (kVAR)	1252.03	1243.36
Max. all-time discrepancy		
Voltage (pu)	0.0002	
Line loss (kW)	0.0132	
Substation power (kW)	0.4002	

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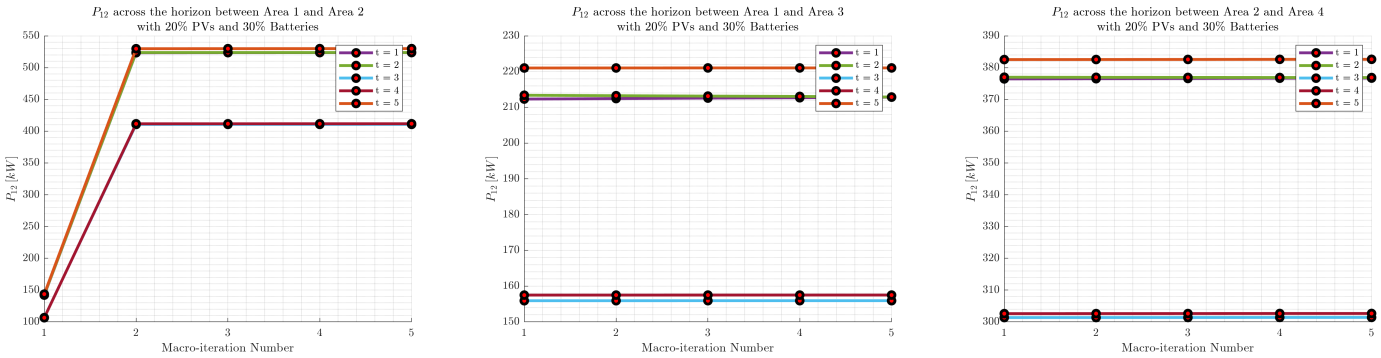
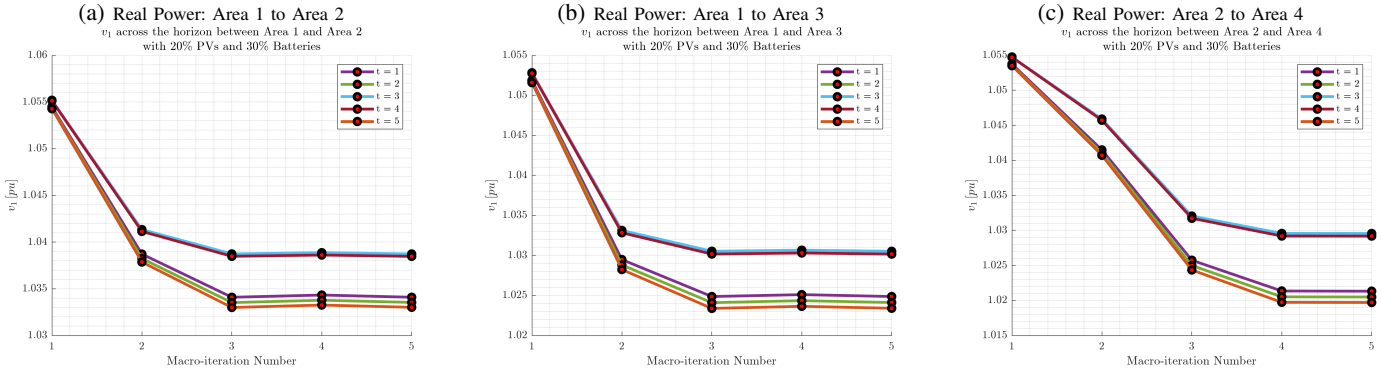


(a) Real Power: Area 1 to Area 2 (b) Real Power: Area 1 to Area 3 (c) Real Power: Area 2 to Area 4



(d) Voltage: Area 1 to Area 2 (e) Voltage: Area 1 to Area 3 (f) Voltage: Area 2 to Area 4

Fig. 2: Boundary variables exchanged between pairs of areas during each iteration

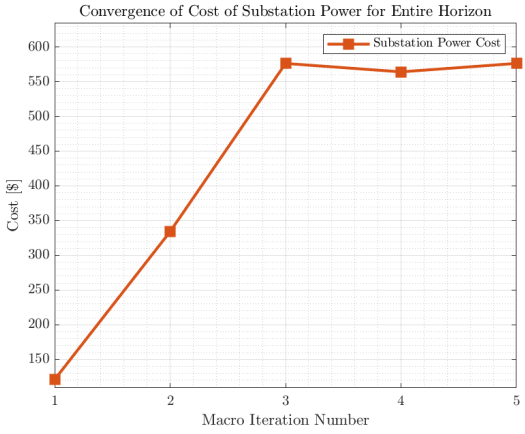


Fig. 3: Convergence of Objective Function Value with each iteration

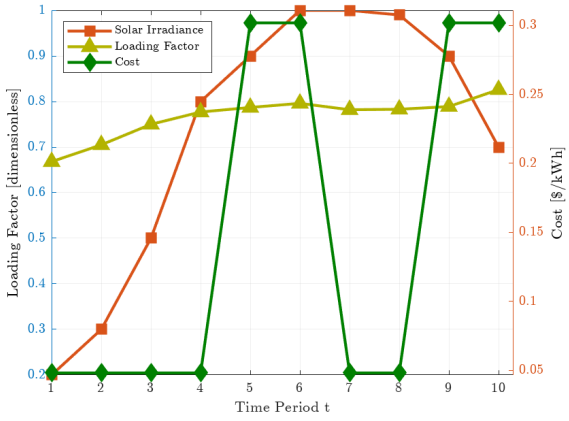


Fig. 4: Forecasts for Demand Power, Irradiance and Cost of Substation Power over a 10 Hour Horizon

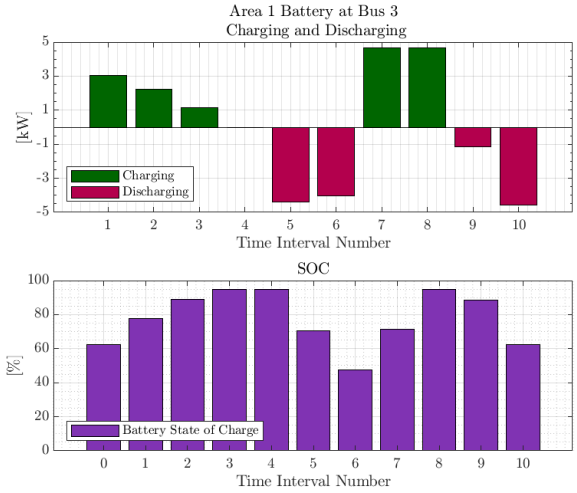


Fig. 5: Charging-Discharging and SOC graphs for Battery at Bus 3 located in Area 1 obtained via MultiPeriodENApp