

I. CASE STUDY DEMONSTRATION

A. Simulation Data: IEEE 123 Bus Test System

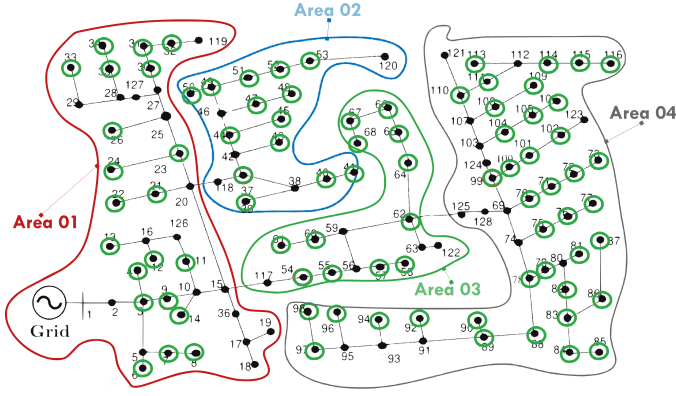


Fig. 1: IEEE 123 Node System Divided Into Four Areas

Change figure to display battery buses and PV buses

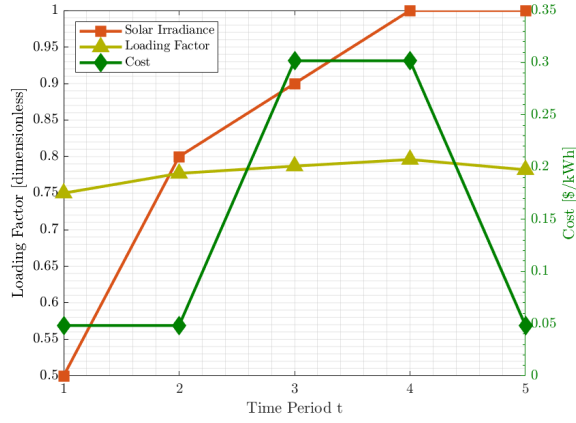


Fig. 2: Forecasts for Demand Power, Irradiance and Cost of Substation Power over a 5 Hour Horizon

TABLE I: Parameter Values

Parameter	Value
V_{min}, V_{max}	0.95, 1.05
$P_{DERRated_j}$	$0.33P_{LRated_j}$
$S_{DERRated_j}$	$1.2P_{DERRated_j}$
P_{BRated_j}	$0.33P_{LRated_j}$
B_{Rated_j}	$T_{fullCharge} \times P_{BRated_j}$
$T_{fullCharge}$	4 h
Δt	1 h
η_C, η_D	0.95, 0.95
soc_{min}, soc_{max}	0.30, 0.95
α	0.001