

Chapter 5

Conclusion and Future work

A combined genetic and simulated annealing algorithm (CGSA) is proposed to solve ramp rate constrained economic dispatch problems with linear decreasing IC, linear increasing IC, increasing staircase IC, and decreasing staircase IC functions. The CGSA method is superior to SA, LS, GA, GA-SA, and MOL methods in terms of the quality of solutions, leading to substantial generator fuel cost savings.

CGSA is applicable to ED with other types of non-monotonically increasing cost functions and ED with the transmission line constraints [14]. Furthermore, CGSA would be applicable to other optimization problems such as the optimal power flow with FACTS devices [15], unit commitment [16-18], maintenance scheduling [19-21], reactive power optimization [22], transmission network expansion planning [23], and energy loss reduction in distribution system by capacitor placement problems [24].