

## List of Tables

1.1 Various elements of power losses according to EPRI	1
1.2 Benefits gained from the unmetered power losses reduction by means of the proposed alternatives	6
2.1 Types of unmetered power losses based on the components identified	12
3.1 Search Strategies based on Search Directions and Evaluation Measures	18
4.1 Number of customers provided by MGVCL, Gujarat based on the two city selected	26
4.2 Load conditions	27
5.1 Results for time processing duration in seconds with ELM	41
5.2 Results for classification accuracy as percentages with ELM	41
5.3 Results for time processing durations in seconds with OS-ELM	43
5.4 Results for classification accuracy as percentages with OS-ELM	43
5.5 Results for time processing durations in seconds using SVM sigmoid	44
5.6 Results for classification success rate as percentages using SVM sigmoid	44
6.1 Mean and standard deviation of seasonal consumption for customer 1	49
6.2 RMSE Results with the Prediction Algorithms based on different season	50
6.3 Mean and standard deviation of seasonal consumption for normal behaviour	50
6.4 Mean and standard deviation of seasonal consumption for abnormal behaviour	51
6.5 Mean and standard deviation of seasonal consumption for suspicious behaviour	51
6.6 RMSE Results for normal behaviour	52
6.7 RMSE Results for abnormal behaviour	53
6.8 RMSE Results for suspicious behaviour	53
6.9 Mean and standard deviation of seasonal consumption for customer 3	53
6.10 RMSE Results with the ELM and OS-ELM Prediction Algorithms based on different season	54