CHAPTER V

CONCLUSION AND RECOMMENDATION

Conclusion

The output power of samples selected from each lot of modules was measured along with other parameters of I-V curve under field conditions. Measured parameters were then corrected to STC and were compared to the nameplate values. All the samples from crystalline modules showed higher degradation in output power in opposite to a-Si modules which showed no degradation in comparison with nameplate values. However analysis of previous data for a-Si array revealed that these modules were performing above the nameplate data since after their installation. It seems that a-Si modules were stabilized at value quite higher than nominal during initial period of use. The all three lots of crystalline modules failed to perform in accordance with the guarantee conditions provided by the manufacturers. The annual degradation rate was also found higher when compared with the rates measured by previous researchers.

The substandard performance can be chiefly attributed to the quality of modules and partly to the hot and humid operating conditions. The detailed study of reasons behind such higher order degradation in the modules can reveal important facts. Moreover the quality of material and processing needs to be ensured at manufacturing facilities to achieve reliability during operation as most of the modules found with reduction in voltage referring towards the reduction in short circuit resistance. The qualification standards may be improved for varying climatic conditions as well.

Recommendations

1. Some samples should be tested at an indoor facility with standard test conditions to further authenticate the results.

2. A detailed study is required to investigate the possible causes of fast degradation.

3. Every PV installation should be evaluated for guarantees provided to produce a feedback.