CHARPTER V

CONCLUSION AND RECOMMENDATION

Conclusion

1. The experimental evaluation of measurement data showed that the average daily actual COP was 0.30 while the manufacturer showed a COP at nominal conditions equal to 0.70.

2. The Least Square Method was used for creating the system's equation with the validation by relative error was obtained being less than 15% (in the worst case) that made the idea to set the mathematic function into two groups by mean of non-usage and usage the auxiliary conditions.

3. The technical optimal model was used for guideline the controller when the maximum actual COP was requested by mean of trapping more energy from the heat sink.

4. The COP was higher sensibility than the $SOLF_{the}$ for the SLCCA calculation.

5. The SLCCA was 0.08 Baht. kWh^{-1}.

6. The IRR was 9.09%.

7. The NPV was 798,686 Baht.

8. The B/C Ratio was 1.27 and the PB was 13 years 8 months.

9. The lowest total cost of a system throughout its life time appeared when the maximum actual COP.

10. The prediction of the variation of water flow rate by mean of balancing heat sink and heat source was suitable for the non-auxiliary usage condition.

11. This simulation should be a powerful tool for solar cooling both development and testing of control strategies in Thailand.

12. The optimization equation was written in term of COP and IRR when the flow rate of water was vary. During winter, the water flow of evaporator and generator did not exceed 1 $kg.s^{-1}$ while in summer it did not exceed 0.5 $kg.s^{-1}$ by mean of the optimization both technically and economically.

Recommendation

Due to the experimental evaluation, improving or changing the storage tank should be increase the thermal performance because the optimal storage volume was about 100 $l.m^{-2}$ solar collector areas and the storage's insulation thicknesses should be more than 15 cm. (Andersen and Furbo, 2007, pp. 1-15).