CHAPTER V
CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

In this study, LCA was conducted to assess the environmental impacts of CRT television at its end-of-life stage. The results of this study indicated that the current CRT-TV waste disposal in Thailand had significant burdens to environment and human health. The improper waste management of television wastes causes considerable quantity of wastes discharged into the environment and it could pose serious consequences on human life and environments. This study, five different scenarios of CRT-TV end-of-life treatment based on current technologies (recycling, landfilling, and incineration) were created and further assessed for possible reduction of impacts. The five scenarios of CRT-TV end-of-life treatment consist of Base case (current situation end-of-life in Thailand), Case1 (improvement of Base case), Case 2 (best achievable technology), Case 3 (modified technology from China), and Case 4 (modified technology in Japan). The environmental impacts of current end-of-life treatment for CRT-TV (Base case) representing highest landfill fraction (86 %) and lowest recycling (12.2 %) with incineration (1.8 %), caused by the disposal of waste to landfill and disposal of cables by incineration. Especially, the incineration process had significant effects on global warming and human toxicity impacts. Comparing environmental impacts of each end-of-life scenario, Case 2 which has highest recycling (92 %) and lowest landfill (8 %) with no incineration was the best case scenario, due to lowest impact in all categories. Moreover, comparing between the current waste management of Thailand (Base Case) and Case 2 , the normalized environmental impacts results showed significant reduction in on abiotic depletion, global warming, human toxicity and acidification of 65.28 %, 45.04 %, 45.09 %, and 58.19 %, respectively. The abiotic depletion and global warming impact categories were sensitive environmental attributes depending on an increasing of the recycling portion of CRT-TV wastes. In the other hand, the environmental impacts on human toxicity and acidification were less sensitive parameter. The results obtained in this

study could be used as support information of policy making and guideline for improving the television disposal/waste management in Thailand.

5.2 Recommendations

5.2.1 Recommendations for Improvement of Inventory Data

Although the LCI data were retrieved from related literature and references, it might not be completely and enough using for LCA software.

5.2.2 Recommendations for Improvement of End-of-Life Management Environmental Friendly

From the waste management scenario results, it can be seen that materials recycling process still plays important role in reducing emission and its impacts to the environments. Therefore, if the governments or national agencies and industrial associations should have a policy to encourage the use of recycling technology for CRT-TV waste disposal with the aim not only to reduce the environmental impact but also to achieve sustainable waste management.