Limbah komputer korporasi dan upaya minimisasinya: studi kasus PT Bank Rakyat Indonesia, Tbk.

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Abstrak

Based on the information technology rapid improvement, it can be predicted that computer waste generation in Indonesia is quite high. Compare to individual users, corporate users do easily change their old devices with the latest ones. Thus this research is focused on corporate users, in this case PT. Bank Rakyat Indonesia, Tbk. (BRI). To provide the best service to the clients, IT equipments are the first preference to process and store data. However IT equipment ?computer desktop, used in this research- has such a short life-span, 5 years maximum. The need for the latest and highly improved devices is backed up by the sufficient fund hence BRI is potential enough to cause the increasing of computer waste generation. Waste minimization by 3R must be conducted, since computer waste contains of many hazardous substances that can cause environmental pollution and give horrible impact to human. On the other hand, waste minimization through computer waste recycling cause negative impact to the worker and people live nearby the recycling site. So that this research is dedicated to reach the objectives, which are: 1). to identify the life cycle of BRI?s computer, 2). to identify the BRI?s potential of computer waste generation, 3). to provide an analysis on the advantages and the disadvantages of computer refurbishment and computer waste recycling. To methods used for achieving first objective are partially life cycle assessment and interviews to BRI logistics staff. The next objective is reached through inventory analysis and impact analysis. For the last objective, the methods used are improvement analysis and interviews to BRI staffs, collector, recyclers and staff of Environmental Ministry. All objectives previously analyzed through literature reviews.
The research found that since 2007 BRI has no longer used their own computers, but rented computers instead, therefore the life cycle of BRI computer is described within two parts. First, the life cycle of BRI computers, started from the use by BRI and the computers will be released through public sale to the society/collectors before the scrap computers find their final destination to the recyclers. In each step of xii the way, there will be waste generated. Second is the life cycle of rented computers. It begins from the vendors and then to BRI, next if the computers are no longer used the vendors possibly sell, rent out or sale them to public. The potential waste generated from BRI?s computers is approximately 925.7 tons of solid waste, contains of hazardous substances. The numbers were calculated based on BRI assets. Based on 5-year hardware lifespan, estimated potential waste generated would be 329 tons of solid waste in 2008 from 12.667 PCs, 180 tons from 6.948 PCs in 2009, 68 tons from 2.647 PCs in 2010, 49 tons from 1.892 PCs in 2011. BRI computers would reach to an end on 2012 by generating 32 tons of solid waste from 1.227 PCs. Potential solid waste generate by rented computers is estimated 54,6 tons/yr. Computer waste generated by public sale of scrap computers from 2005 to 2007 is about 103 tons. The effort to minimize impacts to the environment is waste minimization, refurbishment and recycling. The refurbishment on used corporate computers is slightly possible since the used computers sold are already in totally unusable.
Despite the business and job opportunity given by computer waste recycling, there are also some obstacles in the process, which are: insufficient technology, no regulation and monitoring, no coordination; and high

operational cost. The suggestions given are: 1). Use the rented computers wisely, 2). Polluters pay principle must be considered to be applied 3). It needs a good design on computer waste management, such as waste exchange that provides informations, accommodates the legal procedures and transportation. During the recycling operation, there must be adequate monitoring, to make sure the residual waste is handled and to monitor the worker health. To minimize the waste from the source (producers), it is suggested that BRI keeps being commited using ecolabel rented computers, so it will give pressure to the producers to manufacture green products.