

CHAPTER 3

STATEMENT OF NEED

Metal based catalysts are employed in many processes, notably petrochemical based processes as are found in Kertih in Terengganu, Gebeng in Pahang, Pengerang in Johor, etc. Often the metals are highly valuable metals, such as Vanadium and Molybdenum, used in catalysts at low concentrations. Due to the low concentrations, spent catalysts are usually disposed as scheduled wastes (SW 202) and replaced with new catalysts using mined metals. The valuable metals occur in nature at low concentrations and large mines are required to obtain a few kilograms of those metals inflicting enormous environmental impacts, leaving huge irreversible scars in nature. The need to close the loop on metal supply and usage is one of the important sustainability goals essential for continuation of human life and the technologies to sustain it. On the environmental front, the recovery of metals is a major means of reducing mining requirements and their impacts. Recovery of the metals faces the challenges of technologies to recover from low concentrations and the economics of producing and marketing of recovered products to render the plant investment viable. Only one who has had mature experience in the technologies and economics of such recovery from spent catalysts could confidently be assured of its viability, and prevent spent catalysts from going to wastes. Taiyo Koko has been successfully running the valuable metals from Spent Catalyst Recovery Facility (SCaRF) at Ako in Japan for many years and developed the technologies and economics for it. Malaysia being a major petrochemical country in the region, the same SCaRF as in Ako is going to be repeated here, thereby saving the valuable metals from being wasted and by the renewal, saving the earth from large mines to obtain those metals.