ABSTRACT

Currently, steam for product drying up at PT TPC Indo Plastic and Chemicals use residue as its fuel. The price increase and scarcity of residue in Indonesia, increases the cost of production at PT TPC Indo Plastic and Chemicals. The cost of residue from USD 1.9 per ton PVC product drastically increase to USD 59.2 per ton PVC product. With this tremendous cost increase, PT TPC Indo Plastic and Chemicals needs to consider alternative boilers to meet the need of steam. There are options to be considered, such as boiler fueled by coal, natural gas and rice husk.

This research is meant to add determining priorities in choosing the appropriate boiler. Method of analysis to be applied is multi criteria analysis based on application of analytical hierarchy process (AHP). AHP is exercised in this research to compare and to select alternative boiler priorities. The process selection is based on several specified non interdependent criteria’s. These criteria’s are economical, technological and constructional and environmental. The result of determining alternative boilers to supply the need of steam for PT TPC Indo Plastic and Chemicals, based on the criteria mentioned above, are first coal boiler with a score 0.483, followed by rice husk boiler scoring 0.261, natural gas boiler scores 0.157 and last residue boiler scores 0.100. Sensitivity analysis shows that environmental impact criteria has an important role in the decision process for alternative. This list of priority changes whenever score for environmental impact criteria reaches 50%.

Keywords: scarce residue, alternative boiler, analytic hierarchy process.