ABSTRACT

The steel industry is one of industries that concentrate on energy, and types of upstream industries are prioritized in Indonesia. National steel demand by 16 million tonnes in 2016 and will continue to increase up to 32 million tonnes in 2025 to make the steel industry must remain competitive. The amount of energy used in the production process ie energy of LNG and electricity as well as the high prices of raw materials to make steel industry should be able to use all three of these things efficiently. In the other hand, the activity of the production process is often a breakdown on a rolling machine that makes production process on the stage rolling line stop except the reheating furnace were still burning. This leads to inefficiency of using energy and reduce the productivity of reinforced concrete that can be generated. One of the causes of the breakdown in the rolling machine is negligence labor.

In this regard, this study aims to calculate the level of efficiency in production units rolling mills rolling mills 1 and 2 were affected by the disruption of the production process is the breakdown in the production of rolling mills rolling. Unit of rolling mills 1 and rolling mills 2 in PT Jakarta Cakratunggal Steel Mills was taken as the research object. To solve this problem, this research use the approach of Data Envelopment Analysis (DEA) model CRS input oriented and the DEA approach used MaxDEA Basic 6.4 software.

At the DEA approach used MaxDEA Basic 6.4 software. From the calculation of the efficiency using the DEA-CRS input orientation is known that there are eight concrete iron production units are inefficient, A-2012, A-2013, A-2014, A-2015, B-2013, B-2014, and B-2015 with the value of the efficiency of each are 0,99; 0,99; 0,99; 0,94; 0,98; 0,99; 0,98 and 0,96. Then, a big improvement potencial values of input parameters using the unit of production of rolling mills within the last two years ie 2014-2015 year is the use of electrical energy by 93.56% amounting to 65.20% of LNG energy, labor amounted to 49.00% and raw materials sebsar 11.92%. One of the causes the value potencial improvement or inefficient use of the input parameter is the breakdown on the engine components, namely rolling bearings, adjuster gap, entry / exit guide, caliber and coupling.

Keyword : Efficiency, Data Envelopment Analysis (DEA), DEA-CRS, input oriented.