STATE OF THE ART SOx REDUCTION WITH QUANTA^{Ô} TECHNOLOGY

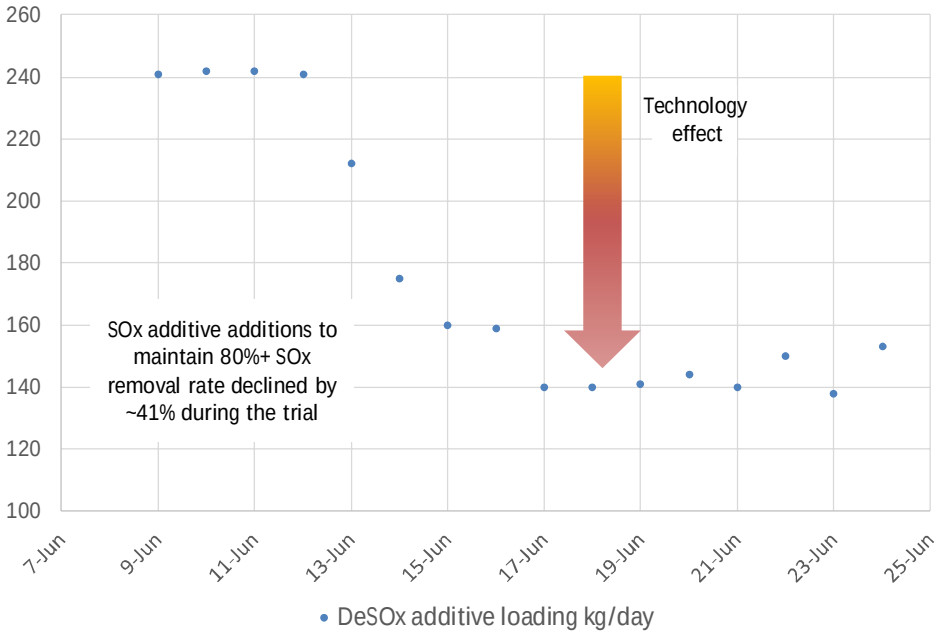
SOx additive usage declined drastically during a recent commercial trial.

During a recent commercial trial with Quanta Technology, the additions of a commercially available SOx additive declined by about 41% after Quanta Technology was applied to the additive. This publication describes the preliminary findings of this trial and the potential for cost savings available for additive users. Figure 1 below shows how additive additions declined when the treated material was used in the FCCU.

In order to quantify the normalized impact of Quanta Technology on SOx reduction performance, multi-variable regression analysis was performed. With this technique, a model was developed to predict SOx reduction with data previous to the trial. The model identified flue gas O2 content, SOx additive concentration, feed rate and feed sulfur content as the most relevant predictors of SOx removal rate.

In figure 2 in the next page, it can be seen how the regression model accurately predicts the SOx removal rate previous to the trial when the untreated material was used. In the right hand side of the same plot, the predicted and the actual SOx removal rates start deviating from each other. The difference between these two populations can be attributed to the effect of Quanta technology and it can be clearly seen that actual removal rate is higher than predicted for the untreated material at the operating conditions experienced during the trial.

Fig. 1: SOx Additive additions Kg/day



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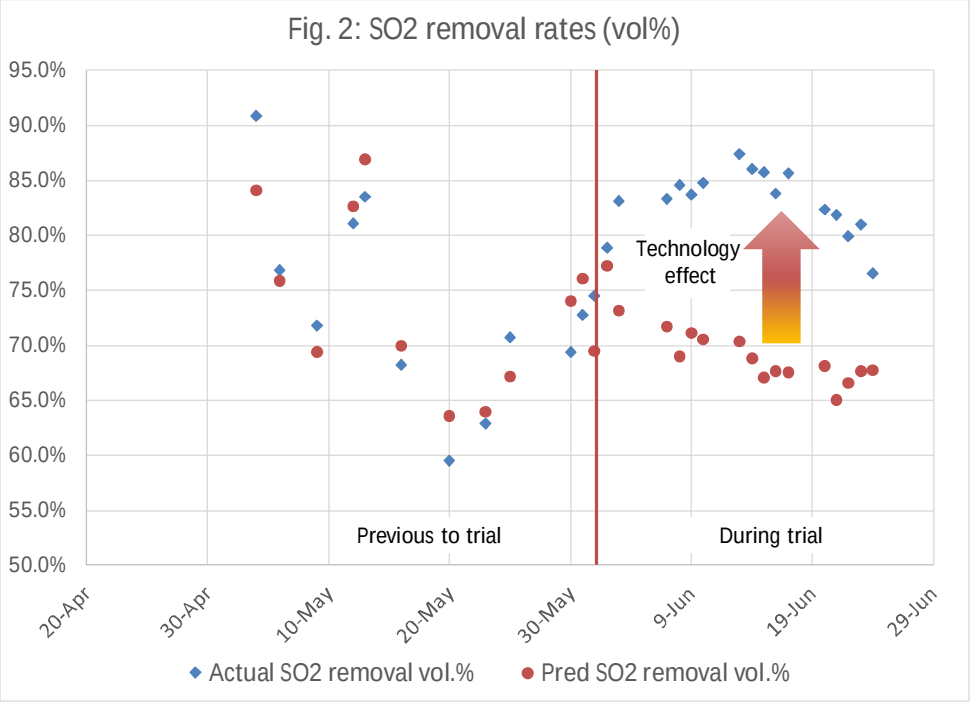

Once the impact of independent variables different than the Quanta treatment was identified and isolated, Quanta concluded that the normalized effect of the technology was an improvement of 15 vol% (abs) in the SOx removal rate at this location. Refiners can benefit from the room created in several ways, such as for example; 1) reducing the amount of SOx additive (by 41% or more) to stay within compliance, or

The specific details about the nature of the treatment applied to the SOx additive remain confidential at this early stage because Quanta is applying for a new patent; however, the benefits are readily available for customers that desire to take advantage of the technology right away.

2) Increasing the amount of sulfur precursors to the FCCU. This can be achieved by increasing the feed rate to the FCCU, or by increasing the amount of sulfur in the feed, all of which would result in superior financial performance.

Call Quanta today so we can help you reduce your compliance costs and improve environmental performance.

REINVENTING FCC ONE UNIT AT A TIME

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