

A B S T R A C T

PRODUCTION PLANNING USING A  
PRODUCT BLENDING MODEL FOR  
AN OIL REFINERY

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Planning is vital to the success of any business as it ensures that all activities are carried out effectively and as efficiently as possible. In the oil industry, especially in the refining sector, planning is of even more importance in the current market scenario. For refiners, production planning is the means whereby the volume and type of products derived from the processing of crude oil is determined. The accuracy of the production plan therefore, can make or break a company as products are sold on the basis of the output of this plan. The production plan also sets the processing mode for the various processing units that compromise a modern oil refinery.

Production planning must therefore seek to optimise the availability of higher valued petroleum products while minimising the costs required to do so.

One of the ways of maximising profit is through the optimisation of product blending as the finished products ex refinery is a mixture of a number of component streams. In the present technological age, computers, together with the mathematical technique of linear programming, are being used to formulate refinery production plans and hence optimise operations.

The Trintoc refinery at Pointe-a-Pierre does not have a refinery LP model and one was constructed to represent current operations. The small LP system LINDO (120 rows) was used and analysis of the model results (model calibration) showed that the model accurately reflected actual refinery operating conditions. On this basis it was recommended that a larger LP model be built and the small model be used to familiarize Trintoc personnel with LP techniques and analysis of model results.