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**USE OF A SIMULATION MODEL TO EVALUATE THE USE OF VEGETABLE OIL IN
A NEW REFINING PROCESS FOR DIESEL USING EXISTING INSTALLATIONS**

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The current concern over sustainable development has shown the need to define new limits for automobile emissions. Researchers have been looking for economical, renewable, less polluting fuels. In accordance to this, the H-Bio process was developed. This technology replaces up to 10% of the volume processed to obtain diesel in the refinery with vegetable oil using the currently installed equipments. However, such change has an impact in the storage and handling of the products involved in this process around the tank farms.

In order to evaluate this impact, Petrobras has been using simulation models, whose greatest advantage is their flexibility to test parameters and configurations and to foresee the consequences of new stock politics and new processes without the need to actually build or redesign plants. Using the joint analysis of the input parameters and results, it is possible to detect operational bottlenecks, plot comparative graphs and analyse the results of new investments, searching for cost-reducing opportunities and substantiating technical and managerial decisions regarding stock optimization.

In this work, we shall present the application of one such model in a study in Petrobras' largest refinery, which has had to change substantially its storage facilities and diesel-forming process to account for the H-Bio and keep up with the new, stricter environmental restrictions to Brazilian diesel. From the model's output, the number of tanks needed by each product involved was inferred and the best way to schedule the receiving and using of vegetal oil was chosen without restriction introduction.