Account for the additive into your Diesel blending optimization chain

Optimize your Additives input

In Europe, from the year 2000, the degree of freedom and, as a consequence the refineries margins have been significantly reduced. Due to recent environmental and other constraints in relation to diesel production, diesel blending has now become a key area to be optimized for many refineries.
It is now crucial to consider the additive part of the optimization process to maximize the margin.

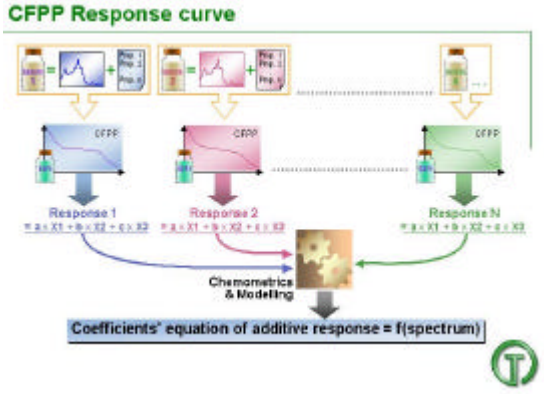
Additives have been considered as a "basic commodity", not as part of the supply chain.
Since additive response curves are strongly none-linear and complex, operators usually introduce a large excess of additives to reach the commercial specification at once and avoid re-blending operations.
Accounting for the market price of additives, this additive excess leads to significant profits losses.

ADDITIVE MANAGEMENT

Optiblend system, fully integrated to Topnir is the NIR solution for additive optimization. OptiBlend additive module determines the right amount of additives to be introduced into the finished product to reach the specification without giving away on the quantity of additive.
Optiblend accurately handles MDFI, Cetane booster and others

The additive response models are fine-tuned to account for:

- The finished product fine chemistry
- Blending recipe
- Additive fine chemistry
  (Interaction with the finished product)
- The amount of additive

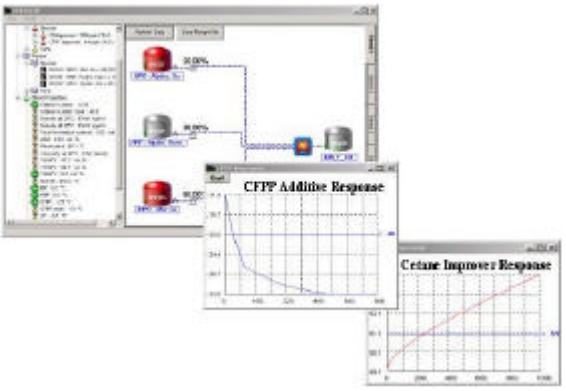


INCREASE PROFITS

Maximize refinery profits by accounting for the additives effects from the blending optimization stage.

Typical profits from 1 to 2M USD per year

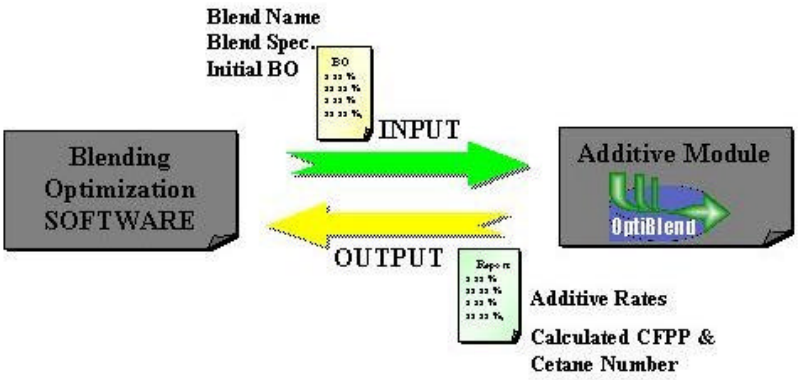
- Input the right amount of additives
- Operate single step blending
- Optimize blending components management
- Minimize re-blending operations
- Reduce control laboratory load
- Reduce analyzer maintenance cost



The additives responses are calculated directly from the NIR spectrum.
The solution provides accurate predictions of the finished product properties (including additive effect) and also the dosage rate curves of the different additives for a dedicated recipe.

Optiblend outputs the required amount of a defined additive to reach the commercial specification.

As illustrated below, our additive optimisation module can be integrated to any blending optimisation software. Optiblend has been implemented off-line and on-line.



REAL CASE STUDY

Considering that:

Cetane Booster price is $1.3/l.
MDFI Improver price is $1.6/l.
Sampling/laboratory cost for Cetane Number measurement is estimated at $300/analysis.
Demurrage average cost is $20 000 per day.
Diesel transfer price is $200/tonne.

BENEFITS ON MDFI & CETANE IMPROVERS (REAL CASE STUDY)	
ITEM	**YEARLY SAVINGS ($)**
MDFI additive input saving	350 000
Cetane additive input saving	148 500
Sampling and laboratory cost minimization	23 400
Product shipment Optimization	726 000
Demurrage minimization	not estimated
Tank mobilization and inventory reduction	not estimated
YEARLY GLOBAL SAVING	**1 247 900 $**

INCREMENTAL PROFITS

In the past, as a result of excessive additive input a major profit loss occurred. There was also a 10 to 30% re-blend rate due to Cetane Improver misevaluation.

Our Additive Management enables the refinery to:

- Avoid useless and costly excess of additives
- Avoid laboratory successive measurements
- Reduce inventories and tank mobilization
- Minimize demurrage

Integrating the additive management into the refinery production chain leads to benefits calculated to more than $1 million/year.