

THE ADDITIVE FOR HEAVY FUEL OIL IS NOT "JUST ANOTHER COST"
THE ADDITIVE ITEM SHOULD BE INCLUDED IN THE BUDGET AS AN ESSENTIAL SPENDING

Technical document RB-10

In the analysis of production costs in a power plant with Diesel engines, boilers or gas turbines running with heavy fuel oil, it is highly advisable to include our first-class **additive for Heavy Fuel Oil "rb bertomeu" beco F1/ASF** among the **essential variable costs**, practically at the same level as the very fuel to be consumed, or as the engine oil, for example.

Logically, prior to this consideration, it is necessary to be convinced that the treatment of heavy fuel oil with the additive "rb bertomeu" beco F1/ASF provides a net financial benefit in respect of the operating costs of the Plant. That is, when using fuel with the additive "rb bertomeu" beco F1/ASF, the plant produces energy at a lower price than when it uses the same fuel without additive treatment.

On the basis of this certainty, the operational budget for the plant **should always take into account the binomial Heavy Fuel Oil / Additive "rb bertomeu" beco F1/ASF**, instead of only Heavy Fuel oil, as part of the essential variable costs for optimal running conditions for the installation.

1-1	Increase of the exhaust valves regular maintenance TBO	+ 50 % minimum
1-2	Increase of the valves regular life span due to corrosion	+ 100 % minimum
1-3	Valve blow out decrease during regular operation period	80 % average
1-4	Increase of the turbo-compressors regular cleaning TBO	+ 50 % minimum
1-5	Increase of the turbo-compressors regular life span due to corrosion	+ 100 % minimum
1-6	Fuel oil consumption decrease per kWhe due to a better combustion	1,56 % average
1-7-1	Fuel oil consumption decrease per kWhe due to a minor wear of the injection equipment	0,9 % average
1-7-2	Fuel oil consumption decrease per kWhe due to a better sludge use	0,45 % average
1-7-3	Fuel oil consumption decrease per kWhe due to the reduced accumulation of residues in turbo-compressors	0,19 % average
1-8-1	Decrease of fuel oil sludge to be treated o recycled	70 % average
1-8-2	Decrease of fuel oil sludge	54,8 %
	Decrease of lubricating oil sludge	26,8 %
1-8-3	Decrease of consumed fuel oil due to sludge reduction	5,80 k/t
1-8-4	Saving due to a lesser sludge volume to be removed (cost of sludge removal 110 €/Tm)	0,638 €/t of consumed fuel oil
1-9	Decrease of downtime due to maintenance	30 % minimum
1-10	Service Factor increase as a result of less downtimes due to breakdowns and scheduled maintenance tasks	To be calculated for each engine or plant

The additive "**rb bertomeu**" beco F1/ASF is not, therefore, just another cost, nor a so-called "auxiliary product" that may be dispensed with in an effort to reduce operating costs, that is, **when the objective is to produce each kWh more cheaply**, because dispensing with the additive can only achieve the opposite effect, in the short term, medium term and long term: this would produce each kWh at a higher cost and reduce the profitability of the plant. At times, there may arise the tendency to eliminate the use of the additive when the price of fuel oil is on the rise, to "cut back on costs", probably without realizing that by eliminating the savings provided by the additive, in reality the cost of the kWh will rise; this occurs in the short term due to increased levels of fuel oil consumption and production of sludge, and in the medium term due to the additional increase in maintenance costs for valves, turbo-compressors, boilers, gas turbines, etc.

On the contrary, the additive "**rb bertomeu**" beco F1/ASF should be considered an integral part of the price of the fuel oil in order that the fuel may provide its highest energy output (minimum consumption of fuel oil per kWh produced) and the lowest possible collateral costs (mechanical maintenance, depreciation of installations, production losses due to cleaning downtimes, treatment and handling of fuel oil sludge, etc.).

The heavy fuel oil additive "**rb bertomeu**" beco F1/ASF to be used in Power Plants has convincingly demonstrated its effectiveness and profitability in several plants equipped with engines from various manufacturers (Wärtsilä, Deutz, MAN, Caterpillar, Mitsubishi, etc.), boilers or gas turbines, and running on different types of heavy fuel oil. **It has demonstrated, by means of measurements and industrial monitoring programs in these Plants, certain facts that their Technical Managers have finally accepted and adopted.**

Those plants continuously using the additive "**rb bertomeu**" beco F1/ASF may expect to obtain all the forecasted financial benefits, although they may not be immediately measurable, because the additive works so that in the medium term and long term it is unnecessary to replace valves, the components of turbo-compressors do not deteriorate and it is possible to prolong the intervals between (TBO) cleaning turbo-compressors, boilers, etc., with the consequent financial savings.

In the short term (periods shorter than 3-6 months) it is possible to measure significant direct benefits such as the reduction in fuel oil consumption (2.4 – 3.1 %), the reduction in fuel oil sludge (50 – 70 %) the costs of its treatment, the reduced need for cleaning filters, depurators and fuel lines.

In summary, if you are convinced that the financial benefits derived from the additive treatment of fuel oil are positive and significant, the presence of the additive "**rb bertomeu**" beco F1/ASF in the annual operating budget must be untouchable and its application should be monitored as a further parameter of the highest level.

It should be remembered that **the higher the price of heavy fuel oil, the greater the savings provided by the additive "**rb bertomeu**" beco F1/ASF** in absolute terms, because of the economic constants of the cost of the additive treatment and the percentage of reduction in fuel oil consumption that it provides.

For more information, please read our technical document "[RB1 Profitability study of the additive "**rb bertomeu**" beco F1/ASF](#)"