

# Consultants Review



CONSULTANT  
OF THE MONTH



Rajneesh Aggarwal,  
Chairman & MD,  
ARK Corporate Advisors

IN MY OPINION

Shantanu Garg,  
DGM, Consumer Insights &  
Brand Development,  
Aditya Birla Management Corp

**Hrishee**  
**Strategic Advisors**  
**Imparting Strategic Business**  
**Enhancement Solutions**

Keyur Shah,  
Founder

₹100





# Know your fuels and what it can do for you!

By Eeshwar Chopraa, Vice President Group, Creatnet

*Creatnet is a Delhi-based company providing emulsified fuel related solutions to the dealers of industrial petroleum fuels. Eeshwar Chopraa has 26 years of experience in Fraud Control, Risk Management, Brand Management, Retail & Wholesale, Sports, Event and Endorsement Management & Business Development.*

**"A** very pious man spends all his time praying to God for a car. Finally one of the angles took pity on him and asked the almighty as to why he didn't grant him one, seeing the man's constant prayers and pleading? God replied, how I can do anything for this fellow, he

doesn't do anything to achieve his aim except praying, he doesn't even buy a lottery..."

Currently, a similar scenario is all prevalent with regards to fuel and energy savings in the Indian SME sectors. While everyone cribs about high overheads and fuel prices, the need to cut costs and save on fuel, but very few actually take any pro-active action to do anything about, to the extent of even fitting a fuel flow-meter to accurately measure the amount of fuel consumed. Hence, there is a need for creating efficient Fuel Emulsification Services to Industrial Fuel Dealers and large industrial consumers of Heavy Fuel Oil or Furnace Oil as it is popularly known in India.

HFO-water emulsification is a globally accepted technology, which provides better economy and cleaner emissions than residual fuels like HFO or Furnace Oil. It also decreases CO levels in flue gas due to efficient combustion and CO<sub>2</sub> levels due to using lesser hydrocarbons. While NO<sub>x</sub> levels reduce by almost 30 percent due to controlled peak flame temperatures and it reduces waste heat generation due to lesser requirement of combustion and excess air.

Here the water is reduced to microscopic droplets and uniformly dispersed in the oily phase. When a burner fires such a water-fuel emulsion, the high temperature flame instantly vaporizes the microscopic water droplets in a continuous series of tiny micro-explosions. As water increases 1700 times in volume when converting to steam, these micro-explosions shatter the oil droplets increasing contact with air, causing gasification and almost complete combustion. This is known as "Secondary Atomization." HFO



Eeshwar Chopraa





Emulsion combustion leaves very little unburned carbon deposits and releases almost all the calories of the fuel.

Outwardly, while Fuel Emulsification appears to be a picture perfect solution for the problems associated with HFO usage like contamination, sludge and poor combustion. And that people should stand in line to adopt it, the reality is starkly different. In spite of containing such enhanced combustion properties and cleaner emissions, fuel emulsions have not gained much popularity except in specialized application such as Gas Turbines and ship engines. The main causes for such lack of acceptance is mostly due to ignorance and prejudices towards mixing oil and water, but also because of the changes needed in the work practice in an industry for using and handling emulsified fuels and getting the right desired results.

Likewise, it was learned the hard way on the field that most clients with Industrial furnaces who use HFO as a fuel have abysmally poor maintenance practices which resulted in clogged filters and pipelines and often use either outdated or even unsuitable burners for their operations. Boiler operators fared slightly

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better but also left a lot to be desired. The net result was that in most of the places the burners were performing below par, with poor economy and produced copious amounts of smoky pollutants. Furthermore, it is extremely difficult to educate semi-literate firemen who handle a furnace burner about how water in oil is actually beneficial just as to correctly adjust the excess air to minimum. Similarly, there is the mammoth task of convincing the management the need of installing scientific measuring devices such as fuel flow-meters and flue gas analyzers and to base their consumption readings on them and not on crude methods like dipsticks which can be easily manipulated.

This reality had forced the industry specific organizations to return to the drawing board and re-think their business strategies. So, instead of only providing Fuel Emulsifying services the team realized that there is a vast scope in offering various consultancies based services for evaluating and advising a client on how to maintain, adjust and streamline their industrial heating related operations. From helping the clients in adopting the most-appropriate operating practices like proper maintenance procedures of their Burners, Fuel filters and Pumps, to analyzing their fuel quality, maintaining proper temperature levels to analyzing their flue gases for determining their combustion efficiency.

We need to provide the most cost effective advice and appropriate solutions to clients willing to improve their Furnace and Boiler related operations. The way forward for companies is to effectively using modern diagnostic equipment like Flue Gas analyzers, ultrasonic flow meters, flame analyzers, pyrometers and thermocouples along with the diagnostic services of a full-fledged Petroleum laboratory. (1)