

# *Rerefining Takes the Limelight*

BY GEORGE GILL



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ew U.S. base oil rerefiners are popping up all over. Improved rerefining technologies, rising virgin base oil and finished lubricant prices, and Valvoline's new nationally branded rerefined motor oil are cited as reasons why.

Announced U.S. rerefined base oil projects currently on the anvil include:

- Heritage-Crystal Clean, which plans to build a 2,000-barrel-per-day rerefinery in Indianapolis near its existing operations. Production will begin in mid-2012. This plant will make API Group II base oils, the company says.
- Avista Oil AG, which acquired a 50 percent stake in Universal Environmental Services LLC, enabling UES to grow its used oil collection business and plan a rerefinery in Peachtree City, Ga., to process 30 million gallons of waste oil per year by 2013. In the oil recycling business since 1951, Avista already operates rerefineries in Denmark and Germany that make API Group I base stocks.
- Green View Technologies expects to commission and bring online a rerefinery late this summer in Rollinsford, N.H. It hasn't released a capacity estimate.
- NexLube Tampa LLC plans next year to begin construction of a rerefinery and lubricant blending plant in Tampa, Fla., with opening targeted for 2013. Expected to process 24 million gallons of used oil annually, the

rerefinery anticipates having capacity to produce an estimated 1,100 barrels per day of Group II base oil.

Once open, these and other newcomers will join the landscape of existing U.S. rerefiners, such as Evergreen Oil (1,150 b/d), Heartland Petroleum (1,500 b/d), Universal Lubricants (780 b/d, no relation to UES), and the biggest of them all, Safety-Kleen, with 5,000 b/d at its East Chicago, Ill., location.

The past year has seen significant increases in virgin base oil prices, and posted Group II base oil prices today are 40 to 45 percent higher than in June 2010. That has allowed rerefined base oils more room to compete against the virgin stuff. Meanwhile, as their raw material costs rose, finished lubricant marketers have implemented three rounds of price hikes this year alone. In each round, prices for most finished lubricants went up from 5 percent to as much as 12 percent — and also widened the openings for rerefined base oils.

Milind Phadke, project manager for Kline & Co.'s Energy Practice, sees great scope for rerefining to grow in North America. "Despite Valvoline's foray, I think this business will be primarily for fleets" rather than individual consumers, Phadke said. "Rerefiners have a much smaller scale of operations compared to large lube com-

panies. These large oil companies have difficulty incorporating rerefined base stocks in their blends as the quantity available is very small and not available in all parts of the world."

For rerefiners, growing beyond a certain size is uneconomical, said Phadke, as the bigger the plant, the bigger the collection radius must be for the used oil and hence the higher the cost. "Some companies like Valvoline do venture in this business, but mainly for the marketing platform."

He noted that rerefining technology has improved significantly. "With the current generation of hydrotreatment technology, it is possible to produce good quality base stocks, often borderline or even better Group II type base stocks," Phadke said. "Also, as the share of virgin Group II and Group III base stocks in mainstream products increases, the quality of used oil obtained, and that of the rerefined base stocks, has also improved."

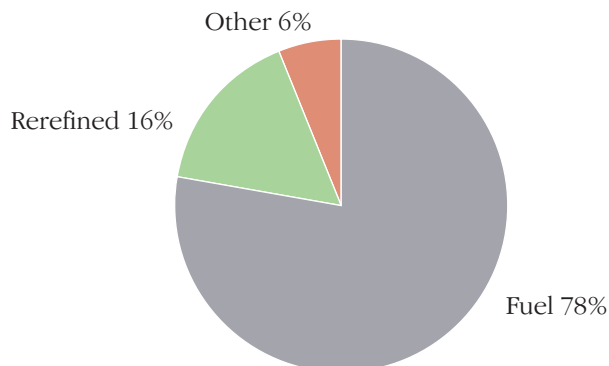
According to Phadke, the growth in finished lubricant prices, driven by high base stock prices and quality upgrades (such as the move from API CI-4 to CJ-4 heavy-duty motor oils), along with the low value obtained for the used oil, means a purely economic case can be made for rerefining.

"Most of the growth that you see in rerefining is the

## Where Does it Go?

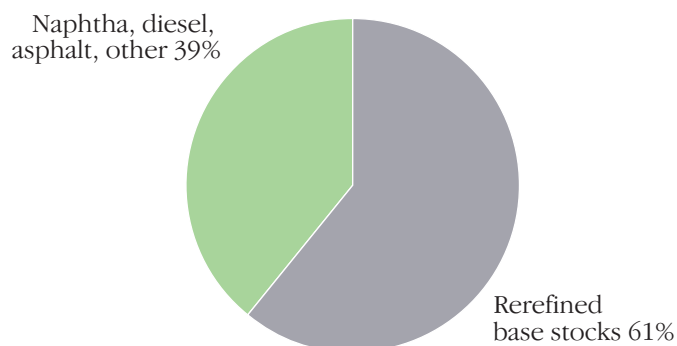
Roughly half of the world's used oil gets collected, but only about 2.6 million metric tons a year is sent for rerefining...

*Total Collected: 16.5 million tons*



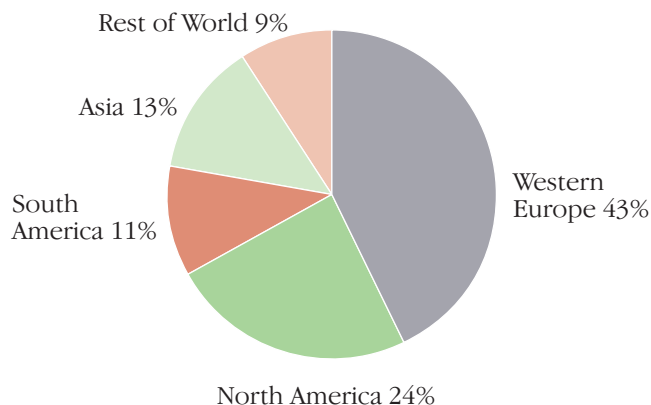
Of what's rerefined, just 1.6 million tons becomes base stock...

*Input to Rerefineries: 2.6 million tons*



And global supply is uneven, with Western Europe making more than 40 percent of global rerefined base oils.

*Total Rerefined Base Oils Produced: 1.6 million tons*



*Source: Kline & Company*

so-called 'closed loop' rerefining, wherein a large fleet contracts with a rerefiner to provide them with used oil which is rerefined, re-additized, and returned to the original application," he said. That's a "win-win" situation, he added. "For the rerefiner, it reduces the cost of oil acquisition and the cost of marketing the rerefined base stock, while giving an anchor load to the rerefining plant. For the customer, they have cost savings and the assurance that the refined oil that they are using came from their fleet and not some unknown source."

While Phadke downplayed the impact of Valvoline's line of rerefined motor oils, others see it differently. Valvoline launched its NextGen motor oils earlier this year. Made with 50 percent rerefined base oil, the line includes conventional, synthetic blend and high-mileage formulations, including some which meet API SN and ILSAC GF-5 standards. All are backed by the same 300,000-mile engine protection guarantee that the company's virgin oil based products offer.

Valvoline may be big, but it's by no means the first to plow this field, pointed out Tom Morley, president of The Lube Stop. His Cleveland-based firm was the first in the United States to trademark a rerefined oil change service, called EcoGuard, offering it across its 37 stores in May 2008; it immediately became 10 percent of sales, he told *Lubes'n'Greases*, and today

represents almost 60 percent of the changes Lube Stop performs. Others, such as Safety-Kleen, North American Lubricants and Universal Lubricants, have branded rerefined motor oils, but Lube Stop branded the service itself — and currently earns a \$2 premium each time a customer chooses this option.

Being in Ohio gives The Lube Stop ready access to the Heartland rerefinery in Columbus, both as a destination for its waste oil and as its base oil supplier. "The key," Morley explained, "is to be within operable range of a rerefinery. We now have a closed-loop product supply, where our waste oil goes to Heartland, and the rerefined base oil is made into motor oil by a lube blender who is near us — there's more than one — and then comes back to our stores."

Morley said a recent survey by National Oil & Lube News found 22 percent of quick-lube outlets in 2010 offered a rerefined oil change — and that was before Valvoline Instant Oil Change with its 850 stores jumped aboard.

"If Valvoline is successful, others such as Shell and BP are sure to become fast followers, similar to 'high mileage' lubricants a few years ago," Stephen Ames, principal of SBA Consulting, Pepper Pike, Ohio, commented. "With that, a very robust requirement for high-quality rerefined base oils will develop, possibly more than the marketplace can

*Continued on page 30*





Milind Phadke

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supply in the near term.”

In Ames’ view, it’s not difficult for a North American rerefiner to produce Group II quality base oil if it is discriminating in its waste oil collection. “The quality of the waste engine oils is already at Group II level although it contains fuel diluents and impurities that must be stripped out,” he continued. “If industrial oils, primarily Group I and naphthenic, are included in the waste oil feed, the quality of the rerefined base oils will be somewhat lower and their applications more limited.”

He noted that most rerefining operations produce

only light and medium neutral cuts. “Most of the light and medium neutral base stocks consumed in North America are for engine oils and for the most part require at least Group II quality,” Ames said. “If one is rerefining to only Group I quality, the markets would be considerably more limited and the value less.”

Most U.S. waste oil is sold as a cheaper alternative to boiler fuel, which in turn establishes the cost basis to the rerefiner. “Depending upon the waste oil collection area, that value could be as low or lower than the natural gas alternative, currently about \$4.5 per mBtu, or \$26 per barrel of oil equivalent,”

Ames said. “One can derive a substantially greater value for the waste oil if upgraded to base oil and especially Group II quality should the Valvoline ‘eco’ marketing program be successful. This is the principal driver behind the recent announcements of new rerefining capacity in North America.”

Morley tended to agree with those cost drivers, observing that waste oil prices in the Northeast tend to rise and fall with the cost of natural gas. Elsewhere, others suggested that rerefiners, their investors and their lubricant customers all need to look closely at whether used oil collectors can keep up with the boom-



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ing demand. Competition for waste oil barrels is turning the trade upside down, confides one longtime marketer who sells the stuff to fuel blenders, asphalt plants, cement kilns, rerefiners and other industries.

This trader, who asked for anonymity, pointed out that prices in some markets are pegged not to cheap natural gas but to the cost of No. 3 fuel oil — and “Bam! they’re going through the roof.” Today, he said, used oil commands about 80 percent to 90 percent of the U.S. Gulf posting for No. 3 fuel oil (itself around \$100/bbl in mid-June). That has pushed used oil to around \$80 to \$90 a barrel when sold in

large volumes.

Gatherers, who scoop up loads of used oil from garages, quick lubes and industrial users, may pay as little as 60 cents per gallon — or three times that, depending on local market conditions. In any case, this source concluded, “it’s dog-eat-dog out there to get these once-worthless gallons.”

“As interest and capacity around rerefining grows, I think the price of waste oil will be more and more pegged to crude,” The Lube Stop’s Morley predicted. But the market could chill suddenly if lube marketers aren’t straightforward about costs, he warned. If cus-

tomers pay dearly for rerefined oil and later find it was actually cheaper to make than conventional gallons, they’ll quickly sour on the entire product category.

“This is not an upsell opportunity, and the cost should be in line with conventional oils,” the Lube Stop executive insisted. “Of course we have to recover our higher costs, such as carrying extra inventory, but you can’t charge exorbitantly for it.

“Green marketing is very sophisticated. If you do it right, you’ll be successful. Do it wrong, and you’ll demolish your business.” ■

*Lisa Tocci contributed to this story.*



Steve Ames

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