

Group I Re-Refiners Dominate Asia-Pacific

By Lam Lye Ching



Increasing lubricant consumption in the Asia-Pacific region is driving demand for base oils. Industry experts say this trend will continue as the region's vehicle population and industrial activity remain robust. However, some countries in the region, totally dependent on imported base oils, are turning to re-refined base oils to meet local demand and reduce reliance on imports.

The global base oil market was valued at US \$30.44 billion in 2015 and is expected to reach US \$30.97 billion by 2020 at a 0.3 percent cumulated annual growth rate from 2015 to 2020 — dominated by demand from the automotive oils segments, followed by the industrial oils segments. In terms of weight, global demand is forecast to increase to 39,614.7 kilotons by 2020 at a 1.4 percent cumulated annual growth rate, with Asia-Pacific expanding its global share to 41.1 percent, according to U.S. consulting company Transparency Market Research's report, *Base Oil Market — Global Industry Analysis, Size, Share, Growth, Trends, and Forecast 2014-2022*, released last year.

For countries such as Australia, Vietnam and Bangladesh, which do not have their own virgin base oil plants, sourcing for imported base oils can be a major challenge for independent lubricant blenders. On the other hand, countries with their own base oil plant can have sourcing issues, too. The large geographical areas of countries such as China and India, and even Indonesia, the world's largest archipelago, with more than 17,000 islands, mean transportation of base oils can be costly and securing a stable supply can be problematic.

Down under in Australia, the country's four base oil plants were closed by 2011 because of the closure of major

international blending plants of Shell, BP, Caltex and Mobil. Although international independent blenders still manufacture lubricants in the country, base oil is largely imported from the Middle East through Asian refineries.

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To reduce the country's heavy reliance on imported base oils, the Australian government encouraged re-refineries to recycle used oils into base oil.

"A waste oil of 8.5 cents per liter was applied to every lubricating base oil and additive made in or imported into Australia, and this came into effect in 2001," said Lawton. The levy is used to subsidize plant investment, oil recovery logistics and API testing. The country also introduced the Product Stewardship for Oil program to create a used oil management partnership between oil producers, recyclers and various local and state governments.

As the country's strict vehicle emissions demand quality lubricants, "Australia is a high-end market, so Group II and especially Group III demand will grow, [so] re-refiners may need to ensure they can make Group II," said Lawton.

However, some Australian re-refiners are still producing Group I base oils and are finding new markets

offshore in Asia's emerging markets including Vietnam, Indonesia, India and China.

The country's major re-refiner, Cleanaway, in Rutherford, New South Wales, is working with a newly set up distribution company, Reoil Pty. Ltd., to develop new markets in Asia. The company is already exporting Group I and Group II 150-grade base oil mostly to automotive lubricants blenders in Vietnam and "currently, we are exploring a few other locations as well," Reoil CEO Kyle Bender told *Compoundings*.

Another re-refiner, Wren Oil, in Picton, western Australia, only exports its Group I re-refined base oil, mainly to blenders in Asia such as Indonesia, Singapore, India and Vietnam, for all types of lubricant applications.

"Our re-refined base oil is in demand due to its high quality," said Alex Wren, director of Wren Oil.



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Like Australia, Vietnam introduced a used-oil collection law in July 2016. "The prescribing retrieval and disposal discarded products law was issued, and this directive was from Congress, the highest government office in the country, and that is good for the environment and for re-refiners," Nguyen Huu Van, chairman and CEO of VN Oil Joint Stock Co., told *Compoundings* in a recent telephone interview. "This means all lubricant producers have to collect used lubricants for treatment, and VN Oil's treatment plant will be the biggest to recycle used oil into base oil," he added.



VN Oil was set up in 2010 with license to use re-refining technology from U.S. Chemical Engineering Partners (CEP). The plant will use hydro-treating technology with catalyst to treat and produce API Group II base oils. The plant will be built in the near future in Hiep Phuoc Industrial Park, Nha Be District, Ho Chi Minh City, where “potential clients” such as Castrol BP and Motul’s blending plants are located. It will become the only re-refined base oil and used oil treatment center for the country, serving the city and surrounding provinces including Tien Giang, Long An and Binh Duong. The plant has a capacity to re-refine 69,000 metric tons per year (MTA) of used oil to produce 45,000 to 50,000 MTA of base oil.



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“Local Vietnamese blenders are the ones who will benefit the most from savings on import taxes, transportation costs by sea and by land, and other logistics costs by buying our base oils,” said Van, who is based in the U.S. and has 35 years of experience in the oil and gas industry.

According to Van, total lubricant consumption in Vietnam is estimated to be in the range of 350,000 MTA to 400,000 MTA, with the majority of lubricants blended locally. He expects lubricant consumption to grow 3 percent to 4 percent per year, with automotive lubricants and hydraulic oils leading market growth. “Our national base oil demand is currently estimated at 400,000 metric tons per year, while our plant will only be able to supply 45,000 metric tons per year. So, locally, there will definitely be more demand for re-refined base oil in the future, and the market has been observed to slowly shift towards Group II base oil,” he said. Like VN Oil, Indonesia’s major re-refiner and lubricant blender, Wiraswasta Gemilang Indonesia, is also using CEP technology. However, at its plant, the company is producing

Group I for local blenders and has eight used oil collection stations. “For now our base oil is only used by local market,” said Wahyu Nugroho, the company’s general manager of Plant Operation.

Another re-refinery company, PT. ALP Petro Industry, has its plant in East Java on 17.3 acres. The company produces re-refined base oil and a lube blending plant for the Italian Eni brand of automotive and industrial lubricants. The company has three blenders to mix various combinations of re-refined base oil, virgin base oil, synthetic base oil and additives.

“Indonesia currently has three main re-refiners, and each company has a used oil feed capacity ranging from 20 kilotons to 60 kilotons. Re-refined basestocks produced in Indonesia are used by re-refiners themselves, sold to small lubricant blenders and exported,” said Sushmita Dutta, project manager of Kline & Co., a U.S.-based consulting company.



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“Re-refiners generally focus on small blenders, who are price sensitive and do not have a strong brand name in the industry, to sell re-refined base stocks,” added Kunal Mahajan, project manager of Kline & Co.

In countries with a large geographical land mass, such as India and China, where transportation costs can have a negative impact on margins and the distance from virgin base oil plants makes it difficult to secure a stable

supply of base oil, locally re-refined base oils have become an alternative feedstock. “For instance, in China, many small blenders are mainly focused on offering acceptable-quality lubricants at low prices and use re-refined base stocks. These companies blend re-refined base oils with virgin base oils to reduce their raw material cost,” said Dutta. “In developing markets like China and India, where demand for API Group II base stocks is less than in developed markets, re-refiners have kept their focus on producing Group I oils. They mostly sell to small blenders.”

Many Group I and Group II re-refined base oil plants in Asia are half to one-third the size of those in Western Europe and North America. Industry experts agree that unlike Vietnam and Australia, where regulations and



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enforcement play a big role in used oil feedstock collection, development of re-refineries in other parts of the region is expected to be limited.

“[Currently], used oil collection in China and India are below average compared to Western Europe and North America, due to regulation enforcements,” said Mahajan.

However, in the future, “China and Thailand are expected to see the most growth in collection, as collection by licensed collectors improves during 2015 to 2025. Other markets will see slightly slower improvement in used oil collection,” said Dutta. Against this background, “China is likely to show growth in re-refining activities. In China, the share of re-refining as a percentage of used oil collected will increase from 70 percent in 2015 to 74 percent by 2025,” he added. But “[the] re-refining scenario in Indonesia, India and Thailand is likely to remain unchanged, unless stricter regulations are enforced to promote the usage of re-refined base stock,” said Dutta.

Ching is a journalist and freelance writer based in Singapore.