

## Refineries



Neste Oil's output totaled 16.3 (15.4) million tons in 2013, of which renewable fuels accounted for 2.0 (1.8) million tons.

Neste Oil has two fossil fuel refineries, at Porvoo and Naantali in Finland, and two renewable diesel refineries, in Singapore and Rotterdam in the Netherlands. The Porvoo site also produces renewable diesel.

The success of Neste Oil's refineries is based on a high level of refining expertise, a commitment to introducing advanced new technologies, and the ability to refine a range of different feedstocks.

The environmental impact and safety performance of Neste Oil's refineries is covered in more detail in the [Sustainability section](#) of the Annual Report.

### Porvoo refinery

Neste Oil's Porvoo refinery is one of the most advanced and versatile in Europe and capable of producing a comprehensive range of major petroleum products, as well as NExBTL renewable diesel. The refinery has a crude refining capacity of approx. 12 million t/a.

The refinery's average capacity utilization rate in 2013 was 88% (87%) and output totaled 12.0 (11.5) million tons. Russian Export Blend accounted for 59% (58%) of feedstock in 2013.

Work on improving the productivity of Diesel Line 4 proved successful, and the line achieved a new record in terms of uninterrupted production in 2013. The line has also now shifted from two maintenance turnarounds annually to one.

Porvoo's two NExBTL production units used waste and residues as virtually their sole raw materials in 2013.

### Naantali refinery

Neste Oil's Naantali refinery concentrates on specialty products, such as solvents and bitumen, and has a capacity of approx. 3 million t/a.

The refinery's average utilization rate in 2013 was 78% (67%) and output totaled 2.1 (1.9) million tons. Russian Export Blend accounted for 89% (95%) of the refinery's total feedstock input.

The refinery operated very smoothly in 2013 following the successful major maintenance turnaround carried out there in spring 2012. Operations were further developed in a number of areas during 2013, in line with the refinery's Polaris development program, which extends until 2015. Tall oil pitch was introduced as a new feedstock, and energy consumption was cut by 24 GWh. The Polaris program also focused on improving the efficiency of the refinery's internal supply chain and maintenance work.

The Naantali refinery's excellent track record in zero hot work-related inflammable material incidents continued for a record fourth year in 2013.

### Renewable diesel refineries

Neste Oil has invested heavily in renewable diesel production capacity based on its proprietary NExBTL technology and now operates the world's two largest renewable diesel refineries, in Singapore and in Rotterdam. Both of these facilities have a capacity of 800,000 t/a of NExBTL renewable diesel. Neste Oil also produces renewable diesel in two NExBTL units at the Porvoo refinery. In total, Neste Oil now has 2 million t/a of renewable diesel capacity, making it the world's largest producer in the field.

The refineries of renewable diesel in Singapore, Rotterdam, and in Porvoo achieved an excellent capacity utilization of 91% in 2013 and total renewable fuels output rose to 2.0 (1.8) million tons.



Neste Oil also produces bionaphtha and biopropane as part of the NExBTL renewable diesel refining process. The NExBTL renewable naphtha produced at the Singapore refinery can be used as a feedstock for producing bioplastics or as a gasoline component. A feasibility study on producing NExBTL renewable propane and isoalkane at the Rotterdam refinery is currently under way.

### Other production plants

In addition to its own refineries, Neste Oil has a 45% stake in a joint venture base oil plant in Bahrain, which produces premium-quality Group III VHVI (Very High Viscosity Index) base oil used in high-quality lubricants. The other owners of the plant are Bahrain Petroleum Company (Bapco) and nogaholding. The plant has a nameplate capacity of 400,000 t/a, and Neste Oil is responsible for marketing and selling its output. The share of Neste Oil of the Bahrain plant's output during 2013 totaled 151 tons.

Neste Oil also has a 49.99% holding in Nynas AB, which produces naphthenic oil and bitumen at sites in Europe and North and South America. Further information on Nynas AB can be found at [www.nynas.com](http://www.nynas.com).

Total refining margin, USD/bbl

