

# Benefits Wineries Can Realize With On-site Nitrogen Generation



Wine making techniques have come a long way since the days of **grape crushing using bare feet**, however modern wineries combine modern manufacturing practices with a variety of traditional, timeless methods. Modern methods include the use of nitrogen in the wine making process. Nitrogen is used to chase carbon gases out of the wine just before bottling, and then during bottling, nitrogen is used to chase oxygen from the bottle before it is corked.



Wine makers can trim costs anywhere between **40 percent and 80 percent** when shifting to **on-site nitrogen generation**, depending on current liquid nitrogen market prices. Bulk costs for delivered liquid nitrogen can range from \$0.35 per hundred cubic feet to \$1.50 per hundred cubic feet. When delivered in cylinders, the price can jump as high as \$3 per hundred cubic feet.

When including a feed air compressor and energy costs at \$.08 kW an hour, wineries can see on-site nitrogen generation **costs drop to \$0.21 per hundred cubic feet** – and that's just in the first two years. When considering the capital costs associated with onsite nitrogen generation (costs such as generators, air compressors, receivers, site preparation, power and maintenance), customers can realize a return on investment in as few as two years and will see day-today operational costs cut nearly in half after that to about \$0.11 per hundred cubic feet – just maintenance and energy costs. Weighing options and competitive pricing from nitrogen suppliers can increase savings even more.

[www.atlascopco.com/nitrogenus/](http://www.atlascopco.com/nitrogenus/)

*Atlas Copco*

**Delivered liquid nitrogen requires that the gas first be converted to a liquid state for truck transport.** Upon delivery, the liquid must be converted back to a gas – this is almost like pouring a glass of water in the kitchen, turning it to ice in the freezer, carrying this solid block to your living room and melting it again so you can drink it. That’s a lot of work for a glass of water. Furthermore, product loss from these two filling points loading at the nitrogen facility into the truck and unloading from the truck at the manufacturing facility – creates product waste, not to mention additional charges for delivery.



**On-site nitrogen generation equipment providers like Atlas Copco** can help wineries determine future savings by working together to develop a spreadsheet that illustrates costs savings associated with a shift to on-site nitrogen generation. All costs associated with the process – liquid nitrogen costs per hundred cubic feet, tank rental fees, delivery charges, hazmat charges and other miscellaneous costs – are taken into consideration.

But technology does not come without a price, and wineries are continually challenged with finding ways to keep costs down (and from being passed along to cost-conscious consumers). Nitrogen gas that is delivered must also be stored onsite prior to use, which can contribute to additional waste; inside a cooled tank, it’s often an automatic 10 percent of the delivery volume. And, without a good vacuum, the tank will lose a minimum of .4 percent of volume each day if internal pressures build from lack of immediate use. Purging or releasing tank pressure contributes additional unnecessary waste as well.

While making liquid nitrogen requires a tremendous amount of energy, 80 percent of uses for nitrogen are as a gas and not a liquid; nitrogen is liquefied primarily for ease of transportation (as well as cool demonstrations in high school science classes). On-site nitrogen generation helps reduce energy use and lower a facility’s carbon footprint. Consider the absence of diesel fuel and associated carbon emissions from truck delivery of liquid nitrogen and these benefits compound.

Shifting to on-site nitrogen generation capabilities can not only provide great opportunities for cost savings at wine making facilities, it’s also a sure way to a more environmentally friendly future.



**Want to learn more?**

[www.atlascopco.com/nitrogenus/](http://www.atlascopco.com/nitrogenus/)

**Contact Us**

**866-688-9611**

**Atlas Copco**