



XeCoveySM Onsite Xenon Recovery System

Eugene Karwacki

Welcome to another Air Products Podcast. I'm Rob Brown. Today we're here to talk about XeCovey—the new on-site Xenon Recovery Service by Air Products. With me is Gene Karwacki, Commercial Development Manager for the Electronics Division. He's been with Air Products for 25 years.

Gene, what's happening in the Xenon market these days?

Well Rob, the biggest thing that's happening in the market over the last year has been the price of Xenon has absolutely just exploded from being only at a few dollars per liter to now reaching prices anywhere between \$25 and \$30 a liter and this has really been driven by what's happened in terms of application for Xenon. This gas has a number of very high valued applications that are increasing the demand for the gas throughout this year and is expected to continue in the next few years.

Just to give you some examples, the flat panel market utilizes quite a bit of Xenon in making plasma displays. The lighting industry uses it, for example, in headlights. The aerospace industry uses it for satellites and keeping satellites in their orbits above the earth. There are medical applications emerging for Xenon and finally, the biggest one and it's impacting a lot of our customers, is the use of it in the semiconductor industry, primarily in etching very fine features in memory and logic devices.

Now how are these high prices impacting semiconductor manufacturers?

Well the critical thing to the customer right now is it's impacting them in their cost of ownership. These processes were developed when Xenon was at a much lower price. It was very efficient to use it at those prices, however, what's happening is that the higher price is becoming too expensive. Now this is driving customers to look for, in their next generation devices, new processes that may not employ Xenon. However for customers who have developed processes that are already in high volume manufacturing, it's very difficult for them to switch away from using Xenon. They would have to develop a new process and qualify it—this would cost a manufacturer quite a bit of money and, in so doing, actually may reduce their yield in their current processes.

And that's where XeCovey can come in handy for customers? Right?

That's correct. Really what XeCovey is—is designed to go into a customer's existing manufacturing process and really it's a series of pieces of equipment that link between the customer's process and the vent header or the place where the waste gas leaves the facility. Here the XeCovey recovers the Xenon which is present in the waste gas at pretty high concentrations, typically about a percent or so. The technology is designed to recover the Xenon efficiently. We expect to have recoveries of Xenon better than 80% in the Fab. The recovered Xenon is concentrated, typically between 5% and 10% in a cylinder which then is taken back to our facility for re-purification for reuse in a customer's process.

Are there any other benefits from XeCovey?

The benefits really come down to being able to stabilize the customer's price of Xenon in their process. By inserting this service, we can extract the Xenon very efficiently and be able to maintain the customer's price of Xenon at a much lower cost. Right now, typically, it would be about 50% less than what they're paying right now in the open market for Xenon.

In addition, because of the demands on the Xenon market, the supply of Xenon is actually not a sure thing anymore and some customers are actually being allocated because of the demand. This way with Xenon Recovery, we're really taking some of that stress off of the marketplace by essentially putting additional Xenon in the marketplace so we can supply a pure supply to our customers.

And finally, we're offering this as a service to customers, not as a sale of equipment. So there really is a minimal amount of capital investment that a customer needs to make in installing the XeCcovery Process into their plant.

Gene, what's the one thing you'd want people to remember about XeCcovery?

I think the most important thing is, it's a way of returning the customer to the cost of the process that they actually designed. The pricing of the Xenon through our service will be very similar to what the pricing was in the marketplace about a year ago, before all these price increases started to occur. And so you're really getting back to the cost of ownership that was calculated in and this is why the benefits of Xenon were utilized in that process.

If customers are interested in XeCcovery, how can they reach you?

The easiest way to reach me would be contacting me by e-mail. My e-mail address is karwacej@airproducts.com.

Go ahead, can you give that to us one more time?

It's karwacej@airproducts.com.

Great. For more information on XeCcovery or to check out a video of the installation process, please go to airproducts.com/XeCcovery. That's XeCcovery. airproducts.com/XeCcovery.

Thank you for listening to this Air Products Podcast.