

KAREN PALLANSCH REMARKS
CIRCULAR ECONOMY SESSION – MARCH 19, 2015

Good afternoon, and welcome to Alexandria Renew Enterprises. We are so happy that you have decided to hold your Circular Economy session on our campus. I know that our chief of operations, David Brewster, gave you a tour. I hope you enjoyed it, and learned about how we are contributing to a circular economy by giving back through sustainability.

Last year, our board of directors created a vision for Alexandria Renew Enterprises that, among other things, directs us to support a healthy and resilient economy, promote watershed stewardship among Alexandria's citizens, enable partnerships to manage water as one resource, maximize revenue through efficiencies, investments, and opportunities, and develop and implement innovative ideas and technologies to enhance resiliency and sustainability. We are already doing many things to achieve the vision, which aligns with your group's vision of a circular economy. For example:

In 2014, Alexandria Renew Enterprises cleaned 13.2 billion gallons of water, enough to fill almost 70,000 pools; removed 4.3 million pounds

of nitrogen, which equals enough bricks to build 91 houses; removed 660,000 pounds of phosphorus, the equivalent of 356 Smart Cars; and also removed 32.3 million pounds of sediment, which equals about 29,400 horses. This work was all to ensure the health of our watershed so that we in Alexandria can eat local fish and swim in local streams.

We also provided 21,300 wet tons of exceptional quality biosolids to enrich farmland in 15 Virginia counties. Our biosolids are pasteurized so they are as pure and safe as they can be when they are spread in the fields. Our biggest challenge right now is finding an alternative solution for use of our biosolids, as more and more legislation is presented that is restricting the spreading of biosolids on farmland in Virginia, even the very best solids like ours. We at AlexRenew and within the clean water industry are researching and brainstorming alternatives, especially those with an energy producing bent. Your ideas are welcome!

From an energy standpoint, we produced 157 million cubic feet of methane gas – the equivalent of four Empire State Buildings -- and used almost all of it to help operate our facilities. This saves on energy usage and costs. We are also looking for additional ways to save on energy,

even by doing small things like temperature savings, variable speed motors, and setting efficiency standards for our purchases.

We also reclaimed 1.4 billion gallons of water to help run our equipment. We are getting into the reclaimed water business within the next few months, building a reclaimed water station where trucks can get reclaimed water to use for irrigation, or piping it for water features like fountains and use in commercial buildings.

One other innovation to further our focus on sustainability is our sidestream deammonification system, an innovative process to help clean wastewater that will begin operations later on this month. The system uses ANAMMOX[®] bacteria – also known as red bugs, even though they are actually microbes. We are one of the first in the nation to design and separately construct a full-scale sidestream deammonification system.

Anammox exists in the natural environment and is safe for use in the wastewater treatment process. The application is used in Europe and Asia with excellent results. I am proud to say that we were an innovator in the field in the United States, conducting a pilot program in 2008

with DC Water, CH2M Hill, and the University of Innsbruck. Other pioneers in the field, including the Hampton Roads Sanitation District (HRSD), are now using Anammox as part of their wastewater treatment processes.

The sidestream Anammox operation is a key component of our Centrate Pre-treatment Facility (CPT), which you saw on your tour. Using centrifuges, the ammonia-rich wastewater is extracted from solids and placed in the CPT, where the Anammox and other microbes go to work converting the ammonia in wastewater into harmless nitrogen gas that is safely released back into the atmosphere.

The use of Anammox bacteria has the potential to create up to 25 percent savings on energy and chemicals when compared to conventional wastewater cleaning processes. The process will also reduce the number of trucks delivering chemicals to the water resource recovery center located near historic Old Town.

The next steps in the use of Anammox will be to learn more and optimize the process, and then begin testing for mainstream operations, which we believe could lead to even greater cost savings.

The knowledge we gain from the implementation and maintenance of the CPT and Anammox process has the potential to be the industry standard. Eventually, we will test the process in our mainstream operations, which could lead to even greater savings—great news for our customers, the community, and the environment.

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Finally, you will see that we have major construction going on just across the parking lot. We are building an 18-million gallon Nutrient Management Facility that will help us better manage the biological treatment process that removes nitrogen from wastewater. Our contractors work hard to be great environmental partners. In fact, they carpoled and saved over 7,000 miles of travel, 300 gallons of gas, and 2.9 metric tons of CO2 emissions. Almost ninety-three percent of the construction waste, totaling 380 tons – was either recycled or salvaged, and construction trailers used high efficiency lighting, low flow toilets and energy efficient electronics.

Once the Nutrient Management Facility is constructed, we will be building a lit turf field on top of it that Alexandria residents can use for soccer games and other sports. Reclaimed water will be used to irrigate the area, and will be used in a fountain water feature. This is another way that we are using an asset to its fullest advantage for the benefit of our community.

With your focus and ours, it is obvious that our interests are aligned, and I hope that sharing what we are doing here at AlexRenew is helpful to you as you conduct your meeting today. I look forward to continuing the conversation with you, and I know David has enjoyed spending time with your group, as well.

Thank you for the opportunity to speak with you. Best of luck with the rest of your day, and enjoy your happy hour with the AETC. They are an amazing group.

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