



Shareholder Update Letter – March 2017

For those of you that are new to Bion, welcome. For potential investors, be advised – this letter is not a substitute for reviewing our [press releases](#) and [SEC filings](#). Some of it is opinion – be sure to note the forward-looking statements disclosure at the end. It is produced to help put some of our complex world in context for our shareholders and keep them updated on political and other activities and events that do not rise to the level of a press release or SEC filing. If you have additional questions, you can reach me at cscott@biontech.com.

This is an exciting time for us. Over the last few months, we have moved forward on several fronts, from progress on key PA policy changes that would create a market with a funding source for our verified nutrient reduction credits to important advances in our 3G technology platform. But perhaps the most encouraging subject is the continued progress toward improved sustainability and safety in the food supply chain...and pressure to do more.

While regulation, nutrient trading policy and politics continue to be important to our story, we believe that ultimately it will be public opinion, consumer demand and improved economics that will drive the change to sustainable production practices. We also believe our ability to deliver a USDA-certified brand that communicates sustainability and transparency to the consumer – in terms they can understand, such as pathogen-kill and measured carbon and nutrient footprints – will be highly-valued by an industry that is struggling with its image on these very issues.

*On a personal note (here is some of that opinion), don't be overly-concerned with the inflammatory rhetoric about "gutting the EPA" and "rolling back environmental protections". And try not to be too frustrated with the glacial pace of PA (and other) politics. First, we are still highly confident that we are on track for a successful competitive bidding bill in PA in this session (that ends in June). More importantly, remember that nutrient credits are one of four revenue streams. The real drivers here are energy and fertilizer byproducts **and that sustainable brand**. That's the ball you need to keep your eye on.*

Craig Scott
Director of Communications

Sustainability in the Food Supply Chain

According to a February 27 article in Fortune, [McDonald's Is Exploring a New Menu Item: Sustainable Beef](#), "Fast food giant McDonald's ([NYSE: MCD](#)) is directing its massive purchasing power to influence a new focus area in the food industry—sustainable beef." The author also noted, "The announcement from McDonald's is an indicator of where the rest of the market could land. When McDonald's vowed to serve only cage-free eggs, it set off a stampede throughout the industry with nearly 200 companies following suit."

McDonalds' decision to move forward on beef sustainability comes at a time of increasingly vocal concerns about livestock production's impact on climate change, water quality and public health. Two years ago, McDonalds was a leader in a voluntary initiative to curtail widespread antibiotic use in chicken, in response to global concerns about growing antibiotic-resistance. By the end of 2017, all chicken sold at Chipotle, McDonald's, Panera Bread, and Subway will have been raised without antibiotics. With many other fast-

food chains following, this has led to abrupt changes in the broiler industry. It is one example of the industry responding to public and consumer opinion, long before regulation was applied.

As a leading global beef retailer, McDonalds' decision underscores the value of Bion's technology platform that can provide high-impact improvements, and verify them through a credible third party, like USDA. Many other food industry retailers are moving forward with sustainability initiatives. Walmart's Sustainability 360 initiative, focused on zero waste, energy efficiency and environmental sustainability, will require improved practices and new disclosures from suppliers by 2018. As this trend continues, and food industry suppliers move to comply, we are confident that the metrics that they will need to communicate improvements in the livestock sector will look a lot like what Bion can provide today.

In addition to consumer demand, McDonalds and other companies, both in and out of the food supply chain, are increasingly influenced by investor activism. Large institutional investors are examining a broad range of issues, including carbon footprint; impacts to air, soil and water quality; and public safety. Assets in impact-, CSR- (Corporate Social Responsibility), SRI- (Socially Responsible Investing) investment strategies reached \$8.7 trillion in 2016, up more than 183% since 2010.

Last November, a group of institutional investors representing more than \$1 trillion in assets urged four of the world's largest livestock producers – Cargill, JBS, Perdue Farms and Smithfield Foods – to address potential water contamination and scarcity. A [letter](#) from Ceres to their CEOs stated:

As investors analyzing water risks in our portfolios, we believe that robust management of water challenges is a critical aspect of risk management in the meat industry, and one of increasing importance in the context of climate change and growing weather extremes.

We believe the future is here. Bion's new 3G technology can provide CAFOs a cleantech makeover that will help move that industry into the 21st Century. Without CAFOs, we cannot produce the quantities of meat, dairy and eggs we need to feed the U.S. and the world. CAFOs are an integral part of the agricultural economic engine and they are not going to just go away; they are going to evolve into clean closed-loop production facilities with much-improved efficiencies.

3G Technology Development

Bion's 3G technology platform integrates anaerobic digestion (AD) on the front end to recover renewable energy (as methane) and to provide an optimized feedstock to the proprietary ammonia recovery system that comes next. AD allows a wide variety of livestock waste to be treated, either separately *or multi-species, combined within a single installation*. This represents another potential application of Bion's technology, so that in certain instances sufficient scale can be achieved through a combination of poultry/egg, beef, dairy or swine production that can be consistently branded across product lines.

You may recall, the evolution of the 3rd generation platform now allows us to capture and concentrate ammonia nitrogen as a commercially-equivalent nitrogen fertilizer – our patent-pending ammonia recovery system. Ammonia nitrogen is produced without the use of polymers or chemical additives, so that we are confident it will meet the USDA/OMRI (Organic Materials Research Institute) requirements for use in organic food production, which represents a substantially higher-value market for Bion compared to chemical ammonia nitrogen.

Lab-scale studies on the 3G platform are now complete, including operational trials under varying conditions, which again, are livestock species-independent. It is important to note that the technology

development process has resulted in a substantially better, more efficient and more cost-effective, design than the initial version of the 3G platform.

We are now finalizing design of a pilot commercial-scale operation that we anticipate will be initiated in Q2 2017. The pilot will produce sufficient quantities of the ammonia nitrogen product for use in organic-grower fertilizer trials, as well as support the application for USDA/OMRI approval. We will also be filing in the very near future for additional patent protection for the 3G technology. Stay tuned.

Policy and Politics

Pennsylvania – At the end of the legislative session in October, SB 1401 was introduced by Senators Richard Alloway and Jake Corman, Senate Majority Leader. To read more about the bill, you can review Bion’s press release [here](#). The primary message of SB 1401 was that the bill was sponsored by Senate leadership. It should also be noted that the election resulted in increases in the Republican majority in both houses of the Assembly.

Since October, there have been a series of meetings to generate support for competitive bidding from critical members of the legislature. Three key aspects of the bill have resonated with legislators:

1. Competitive bidding represents a fundamentally different approach to cleanwater, where credits are only paid for after they are verified. Legislators are beginning to understand the value of transferring the risk of funding and operating projects from the taxpayer to the private sector.
2. There is a growing realization of the importance of local benefits, primarily the future cost-avoidance of drinking water treatment that will be increasingly necessary with continued nitrate contamination of groundwater. As studies have indicated, the value of this and other local benefits could be even greater than the Chesapeake Bay compliance cost savings.
3. Verified credits from projects such as Kreider Farms can be used to offset the Commonwealth’s stormwater allocation of 3.5 million pounds of nitrogen reduction. According to several independent studies, stormwater treatment represents the highest cost for nutrient control and is estimated by the Pennsylvania Legislative & Budget Committee report at \$386 per pound of nitrogen. Both Maryland and Virginia use verified offsets to meet stormwater mandates, a practice accepted by US EPA, but not yet embraced by PA.

Last week in PennLive (Harrisburg, PA’s ‘political paper’) was an [OpEd](#) from the Editorial Board that noted that in a meeting with Gov Wolf, he had “struck a conciliatory tone about getting things done with the Legislature’s Republican majority.” The OpEd went on to suggest, with regard to the Chesapeake Bay mandate, “In the meantime, let’s get creative. Government institutions alone haven’t solved this. **Let’s not just accommodate the private sector, let’s invite them to the table.**” Support for competitive bidding continues to grow and we remain confident that a bill will be passed in the current session.

To follow Pennsylvania and Chesapeake Bay policy-related news more closely, click [here](#).

National – Now for post-election politics – the ‘elephant in the room’. Sorry, I couldn’t help it. I have taken dozens of calls from worried shareholders and brokers, as well as confused institutional folks, since the election. As you may recall, we issued a press release about this in November that is available [here](#). Having had time now for further reflection, I would like to add:

- It has become clear that President Trump’s statements cannot always be taken literally. It is equally clear that many of the big environmental and conservation NGOs (Non-Government Organizations) are using those statements, coupled with their own inflammatory rhetoric, to raise money from

their supporters. It is working; they are raising money in record amounts. While US EPA will be the subject of substantial funding cuts, the agency is not going to be abolished.

- While the Waters of the US Rule and the Clean Power Plan are being rolled back, remember they were never implemented to begin with. There has been no mention of eliminating the Clean Water or Clean Air Acts and it has been reaffirmed since the election that there is no intention on the part of the Administration to roll back the Chesapeake Bay mandates.
- With a reduction in federal funding and no corresponding rollback in the compliance mandate, it will be more important than ever that the Bay states spend their resources in the most efficient and effective way possible. This was a consensus of the PA Joint Senate Committee [hearing](#) on the Chesapeake Bay held in October, just before the introduction of SB 1401. Today, March 16, 2017, it was [announced](#) that the *proposed* budget would eliminate federal funding altogether for Chesapeake Bay cleanup. See above.
- While too early to say with certainty, it appears that agriculture projects like Kreider 2, which directly and significantly impact both surface and groundwater quality, may fit into the infrastructure plan proposed by the Trump Admin, as it relates to drinking water and stormwater.

H.R. 5489, the Agriculture Environmental Stewardship Act that was introduced in the U.S. House in June 2016 (press release [here](#)), has 31 [co-sponsors](#) from across the country and across the aisle. This legislation is consistent with a market-based strategy, applying the same 30 percent ITC that spurred growth in the renewable energy sector, to stimulate market opportunities in nutrient control projects. We expect the issue to be resolved as part of a larger tax bill, later in 2017.

Conclusion

We think 2017 will be a big year for us: we anticipate the implementation of competitive bidding in Pennsylvania, along with successful commercial trials of the 3G technology, followed by commencing development of the proposed Kreider 2 project. During project development, we will have the opportunity to demonstrate the real value of our technology platform to the Street.

As far as politics, I would conclude by stating the obvious: the government/NGO-controlled machine, traditionally supported by the Democrats, IS the status quo we have been fighting in Pennsylvania for the last eight years. We really look forward to now working with both the Republicans and the Democrats on implementing private sector solutions that represent a win-win for everyone. We think the political wind is now at our back instead of our face.

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This update, dated March 17, 2017, includes forward-looking statements based on management's current reasonable business expectations. In this document, the words 'anticipate', 'will', 'potential' and similar expressions identify certain forward-looking statements. These statements are made in reliance on the Private Securities Litigation Reform Act, Section 27A of the Securities act of 1933, as amended. There are numerous risks and uncertainties that could result in actual results differing materially from expected outcomes. Potential investors are urged to review the Company's 10K and 10Q filings with the SEC.