



Dear shareholders and others,

First, to introduce myself: I am Craig Scott, Bion's director of communications. I have been involved with Bion, in one form or another, since 1993. This Update/ Outlook is to help keep our shareholders informed of company developments, especially concerning trends and events that do not lend themselves to a press release. If you would like further clarification on these or other issues, please reach out to me by email at [cscott@biontech.com](mailto:cscott@biontech.com), or phone at (303) 843-6191 (direct).

### **Bion Update and Outlook – June 2021**

Sorry for the lapse since the Aug 2020 update, but with the Covid-related delays and other uncertainties, I thought it made sense to wait until things were back on track before sending an update. And we are on track, as evidenced by the recent conclusion of our 3G optimization trials, and the resulting Lamb Farms letter of intent and application for an OMRI-listing of our solid (dry) ammonium bicarbonate fertilizer product. The following discussion is intended to put these and other developments in context and give our investors a sense of where we see ourselves headed.

The livestock industry has a problem – several, really. While we sympathize, we are also understandably enthusiastic about how some of those current trends affect Bion. The term 'Perfect Storm' might be an overreach, but there is clearly a confluence of events today that favors Bion and our business strategy:

- Environmental impacts on water quality – algae blooms, dead zones, groundwater contamination – have continued to worsen. Scrutiny of the livestock industry has increased.
- The livestock industry has been singled out as one of the largest contributors to climate change by environmental, social, and institutional investor advocacy groups. These groups, including the UN FAO, have mounted a coordinated PR campaign against the industry.
- Consumers are hearing today's anti-meat/ dairy messaging and competitors, such as Beyond Meat, Impossible Foods, and others, have been quick to amplify and capitalize on it. The dairy and beef segments (especially) have been losing market share to plant-based alternatives. Cellular (lab-grown/ 3D-printed) meat is on the horizon.

We believe our technology and business model can provide an 'industry response' for a forward-looking, premium segment of the livestock industry to the anti-meat messaging and the Beyond Meats of the world. Bion can enable production of REAL meat/ dairy products that produced sustainably, with dramatic and verified reductions in carbon and water footprint, as well as improved animal welfare and working conditions. While alternative meat startups have been quick to jump on the anti-meat bandwagon, except for the relatively small minority of vegans and vegetarians, the consumer has not actually asked for a replacement of today's livestock industry. What consumers (writ large) have DEMANDED is that livestock production and its products become more sustainable. We can do that.

Sustainability is now being embraced by certain stakeholders within the livestock industry, who are listening to the consumer and advocacy groups and are looking for solutions. They 'get it'. Bion considers those stakeholders to be potential future joint venture business partners. We have no

intention of going head-to-head with the major producers in the low-cost commodity markets for pork and beef. Nor are we an industry-wide economic OR environmental 'silver bullet'.

We believe that a premium segment of the \$200 billion annual dairy, meat, and egg, market can be carved out that will supply the consumer seeking high-quality, traditional dairy or meat products that are sustainably and/ or sustainably AND organically produced. We also believe the premium segment we will target is potentially at least as large as (or more likely larger than) the market for alternative products, which has been estimated by industry analysts at ten percent of the overall animal protein market. A relatively small piece of a market that large could represent extraordinary value to a small company like Bion.

Moreover, we think Bion is in the right place and now at the right time. I had a conversation with a newsletter writer recently who picked up on my statement that for many years we were a 'science project', but with our third generation (3G) platform, we are no longer. It is true. At Lamb Farms, over the next few months, we intend to up our 3G technology platform in anticipation of moving forward with large-scale commercial projects with joint venture partners in 2022.

It will be a few months before we hear from OMRI about our recent application. However, we are confident enough in the nitrogen recovery process and the ultimate outcome of the application, that we are moving forward with independent/ university-sponsored growth trials to develop third-party data on ammonium bicarbonate in several agriculture/ gardening applications (see below). The supporting 'pieces' – aka the revenue streams – are being put in place.

We think there is a window of opportunity over the next two years for Bion, coupled with joint venture partners, to capture and establish a premium segment of the growing consumer demand for sustainable animal protein products, especially beef. We also believe that there will be a limited market, initially, for remediation of existing large-scale facilities, such as Kreider Farms' layer project. We hope that opportunity will expand with the implementation of state and federal funding strategies related to infrastructure, water, renewable fuels, etc. (see below). If you read our [10-Q](#), released May 12, 2021, you saw that we had \$1.6 million in the bank (a sum that has grown since), much of it from the voluntary exercise of outstanding warrants. This puts us in a good position to move forward over the next several months with Lamb Farms and other initiatives and we thank those investors for their ongoing confidence and support.

### Third Generation (3G) Tech - Development

We completed the core 3G technology optimization trials in [February 2021](#), after experiencing several delays as a result of Covid-related shutdowns and supply chain issues. It held us up – no other way to describe it. We thought we would be finished with these optimization trials last spring, but we were not able to finish them until February of this year. And the trials HAD to be completed before we could move forward with our initial commercial-scale project, as well as produce ammonium bicarbonate as a dry solid for the current OMRI application. That said, both goals have now been accomplished.

### 3G Tech – Lamb Farms Project

Until a definitive agreement is reached, which we expect to have accomplished over the next few weeks, there is not much to say about the Lamb Farms letter of intent that was not included in the [press release](#). However, an important part of that release that many overlooked is the location of Lamb Farms

relative to Bion's prime engineering/ technology provider, [Buflovak-Hebeler](#). It is a happy coincidence that Buflovak is located only 30 miles from Lamb's Oakfield, NY, facility that happens to be one of a select few operations in the country that cleans the biogas produced on-site to pipeline quality, which is necessary to accommodate Bion's ammonium bicarbonate recovery system. Accordingly, we expect that the engineering challenges that arise during construction and commissioning can be handled efficiently and with fewer delays.

### 3G Tech – Organic Coproducts

In May 2020 we received our first [OMRI listing](#) for a liquid ammonium bicarbonate solution that was approved for use as a nitrogen fertilizer for organic crops. This is important because subsequent product filings using the same technology platform (which was deemed 'non-synthetic') can now piggyback on that approval.

Last month we made that first subsequent product filing-- an [application](#) for a new product called AD Nitrogen, which is a solid (dry) ammonium bicarbonate-ammonium carbonate crystal/salt that is a water soluble, readily available, 'pure' nitrogen fertilizer. While OMRI has the final say, of course, the only difference in the liquid that was approved last year and the dry product in the new application, is that we have concentrated the nitrogen compounds by removal of the water. Like the rest of Bion's remediation and recovery process, it is accomplished without additives from outside the waste stream and is also a 'non-synthetic' process. As we have said, we are confident about the ultimate outcome of this application; however, it is clear from OMRI's website there is a substantial backlog, and an answer could easily take four or five months.

For those readers that are new, in the last Bion [Update](#), there is a good explanation of what the terms 'organic' and 'OMRI-listed' mean, as well as the distinction between OMRI (Organic Materials Review Institute) and NOP (the National Organic Program), as relates to Bion. The most relevant part of that discussion is the following:

"The overarching standard of organic production, per NOP guidelines, is that a "product shall have been produced and handled without the use of synthetic chemicals..." That is rule Number One. At NOP, the term "synthetic" means "a substance that is formulated or manufactured by a chemical process or by a process that chemically changes a substance extracted from naturally occurring plant, animal, or mineral sources, except that such term shall not apply to substances created by naturally occurring biological processes." In evaluating and approving Bion's liquid ammonia for OMRI listing, Bion's patented ammonia recovery system was not deemed synthetic. That is an important distinction for future Bion product filings based upon the same patented process."

The organic industry has been one of the fastest growing segments of U.S. agriculture since at least 2015. U.S. sales of organic food (and other organic products) climbed to almost \$62 billion in 2020 – an increase of 12 percent from the year before, according to a new [survey](#) by the Organic Trade Association. *Based on Bion's review of existing products, there are very few OMRI-listed, readily available nitrogen fertilizers with similar attributes as Bion's AD Nitrogen, and we believe that none can be produced at scale at a similar price point. An OMRI-listing would substantially increase the value of Bion's AD Nitrogen.*

While awaiting the OMRI determination, we will be moving forward with AD Nitrogen growth trials to generate third party data on several fertilizer market applications we have targeted. We have already concluded discussions on trials for both field corn and CBD hemp with a Midwest university and anticipate executing agreements and commencing such trials during this summer. We also intend to move forward to establish third party trials of other high value agricultural products, including greenhouse tomatoes, cannabis and potted plants (with a blended/ bagged gardening product). We will announce these trials and their details when the agreements have been completed.

#### Sustainable/ Organic Grain-Finished Beef Opportunity

Establishing joint ventures to produce sustainable and sustainable AND organic meat and dairy products remains a primary focus of Bion's business plan. We intend to use AD Nitrogen fertilizer to support organic grain production that can be used as feed to produce a corn-fed organic beef product. We believe such a product will meet consumer demand with respect to both sustainability and safety, but with the tenderness and taste American consumers have come to expect from premium American beef. A comparable product is largely unavailable in the market today. Organic meat generally sells at a substantial premium to non-organic; it is clear to Bion that sustainable (but not organic) beef will also command premium pricing.

For a better of understanding of what we see as our opportunity in beef, please see [Bion's Beef Opportunity](#) on our website. And understand, the organic opportunity is dependent on our continued success in establishing Bion's fertilizer products as acceptable for use in organic production. However, separate from organic, Bion's vision of sustainable beef, with a dramatically reduced nutrient (water), carbon (air), and pathogen footprint can be produced utilizing our 3G technology **now**, with a USDA-certified brand to back it up.

Bion anticipates establishing joint ventures related to both beef product lines and commence related facility development during 2022.

#### National Policy and Pennsylvania Legislation

It is just too early yet to say what will happen (or more accurately, when), in Pennsylvania or nationally, with respect to air and water quality issues. That said, the problems with the Chesapeake Bay CANNOT be solved without a substantial reduction of agricultural nutrients flowing from Pennsylvania's Susquehanna River watershed, just as the nutrient issues in the Gulf of Mexico and elsewhere cannot be solved until agricultural nutrient inputs are reduced. Climate change will just make things worse, and the largest source of those nutrients is still upstream livestock and agriculture.

From a national perspective, two things come to mind that I think will have an immediate impact on Bion and others in the space:

1. Tom Vilsack, our new Secretary of Agriculture. After serving eight years as the Obama Admin USDA Secretary, Mr. Vilsack spent the next four years serving as the president and CEO of the U.S. Dairy Export Council. He is uniquely qualified to understand the livestock industry's need to increase efficiencies and opportunities as a means to pay for minimizing its environmental impacts. Bion's interests are aligned very closely with the dairy industry.
2. From National Milk (last week): "NMPF-led Environmental Mitigation Proposal Moves Forward in Senate – One of NMPF's key environmental policy priorities took an important step forward

recently in the U.S. Senate. Senator Sherrod Brown (D-OH) successfully secured the inclusion of the bipartisan Agriculture Environmental Stewardship Act, which would *create a 30 percent Investment Tax Credit for nutrient recovery technologies and biogas systems*, as part of Senate Finance Committee Chairman Ron Wyden’s Clean Energy for America Act.”

### The Industry’s Problem

The pressure on the industry is impossible to overlook: surface water; groundwater; nutrients; pathogens; carbon emissions; ammonia emissions; PM2.5; animal rights; working conditions... endless articles and exposés on why meat is bad for you and you must go vegan. And it seems like almost weekly, another fast-food chain (or someone else connected to the animal protein supply chain) is forced to publicize a statement that they are going to reduce their environmental and climate impacts. Most of these plans have no roadmap as to how they intend to achieve their goals, because in most cases they have no idea how they will.

- [Wendy’s Pledge to Set Science-Based Targets](#)
- [Tyson Foods to aim for net-zero emissions by 2050](#)
- [Whole Foods Market turns spotlight on responsible sourcing](#)
- [Bill Gates: Rich nations should shift entirely to synthetic beef](#)
- [Tackling climate challenge through food and agricultural innovation](#)
- [JBS Makes Global Commitment to Achieve Net-Zero Greenhouse Gas Emissions by 2040](#)

There are a lot more like this if you follow Bion on Twitter at @bionenviro.

### Conclusion

I said last August, and it is truer today: transformation of the industry is happening **NOW**, and its logical conclusion is branded and verified products that satisfy consumer demand – the definitive market force. While Bion might have been in Time Out for a while, we are not any longer. We appreciate your patience, and we believe it is about to be rewarded.

*This material includes forward-looking statements based on management's current reasonable business expectations. In this document, the words 'believe', 'anticipate', 'will (be)', 'intend' 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.*

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