Tom Malcolm, MBA
Graduate Fellow, Clean-Tech Consultant
ISIS Research Center, UBC Sauder School of Business

Re: Magnum Group/Emergent Waste Pyrolosis System

Dear Mr. Tom Malcolm:

Thank you for the opportunity for ABB to assist with the proposed Pyrolosis System Project. We feel we can assist with the following:

1. Add ABB engineering and controls technology to a good continuous process
2. Offer a turnkey package for Process Control, Control Room and Power Systems

ABB has an initiative and segment focus on the next generation OEM and End User Biomass to Fuel Plants. As noted in the enclosed power point, ABB is taking a variety of actions to meet a demand that USDA projects will be 500, 40MGY bio fuel plants to meet 2022 federal mandate.

We certainly can help in a variety of ways to deploy these gasification and pyrolysis systems in North America.

What is unique about the proposed system is three fold:

A. This system is pressure neutral. This lends itself to a much safer operation than high pressure or high vacuum operation
B. The system uses steam injection which more effectively permeates the biomass and helps keep the system from being shut down due to fowling.
C. This operation is not batch but a continuous process. In the gasification world it is always better to be able to continue the process repeatedly to insure or even improve results.

It is also our experience that the business model for these projects is enhanced when the process can be applied to multiple feed stocks. While we have not built or tested this one, the technology lends itself to a variety of carbon materials.

Feel free to call me if you have any more questions.

Best of regards,

Nicholas Masucci
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