Strategies For Zero Waste – A Paradigm Shift in Resource Management

Good afternoon –

My name is Fernando Berton and I work in the Organic Materials Management section of the Integrated Waste Management Board. As the name implies, the primary objective in our section is to find ways to best manage our organic resources. This is especially true based on the Waste Board's 2003 Waste Characterization Study. In that study, it was determined that just over 40 millions tons of MSW was disposed of in 2003. Of that amount, 30 percent of the materials still being landfilled is organic in nature. This includes food waste, leaves and grass, Prunings and Trimmings**,** Branches and Stumps**,** Agricultural Crop Residues**,** and Manures. Clearly we must do something to take that 30 percent and turn it into a beneficial use in some fashion. If the entire organic fraction that is currently being landfilled were converted to electricity you could generate over 2300 megawatts.

AB 939 required that jurisdictions ensure at least 15 years of ongoing landfill capacity for all California counties. At the current rate of 40 million tons/year, 15 years of landfill capacity equals 600 million tons. This much landfilled material would fill a canyon larger than 15 miles long, a _ of a mile wide and 20 stories tall. And don't forget that 30 percent of that material is organic in nature that still has some beneficial use. This is not sustainability. These are wasted resources and the focus of our efforts towards the notion of beneficial and sustainable uses.

Organic materials management is just one of many important programs within the Integrated Waste Management Board designed to help accomplish our goal of a Zero Waste California.

I'm sure some of you are wondering what I mean by Zero Waste. I think the best way to explain what Zero Waste is would be to start by explaining what it isn't. Zero Waste isn't about getting rid of huge piles of garbage. It isn't even about recycling every bit of garbage we produce.

As it pertains to the topic of this Biomass Forum, what Zero Waste is about is using all our resources to their fullest potential because IT WILL become a waste if we don't use it to its fullest potential - Much like the 30 percent of the organics still being landfilled.

Take film plastics as an example. Film plastic, like ag. film, is made from ethylene gas. Ethylene gas comes from natural gas. Unfortunately nobody wants to recycle film plastic. There are processes available that can take the film plastic and convert it to a synthetic gas which can in turn be converted to ethylene gas which in turn can be made back into film plastic.

Another example is dairy manure management. It is becoming increasingly difficult to landspread manure so we must look to new management tools. Anaerobic digestion technologies are good examples where you can take the manure and process it through a digestion technology to produce a biogas to run the dairy. In turn, the residue from the

digestion process can be used as a soil amendment to grow crops that feed the dairy cows. How's that for a closed-loop system.

As these two examples illustrate, the future success of diversion throughout California should be tied to resources and resource management, not waste management because as we know, it's not really about "waste," it's all about "resources". This is especially true as we continue to deplete our non-renewable resources.

Zero Waste is based on the concept that wasting resources is inefficient and that efficient use of our natural renewable resources is what we should work to achieve. It requires that we maximize our existing recycling and reuse efforts, while ensuring that products are designed for the environment and have the potential to be repaired, reused, or recycled.

Zero Waste is about utilizing the most effective processing and includes something near and dear to my heart…researching new technologies and harnessing the energy potential by using new and clean technology to convert the material into green fuel or gas to produce electricity. I think California's Renewable Portfolio Standard is one of many steps that foster the philosophy of Zero Waste because it provides an incentive for increased utilization of biomass resources but I think there's much more to be done and that what this Biomass Forum is all about.

The Waste Board is in the process of preparing a report to the Legislature on new and emerging conversion technologies that can help in shifting our focus from waste management and towards resource management. These technologies are new and emerging in the sense that the material being converted, not the technology itself, is new and emerging. For example, gasification and pyrolysis has been around for quite a long time so the technology is not new or emerging. What is new is the use of biogenic sources so in a sense it's really the maturation of the technology.

The success of Zero Waste requires that we redefine the concept of "waste" in our society, the so-called Paradigm Shift that's the title of my presentation. In the past, waste was considered a natural by-product of our culture. Now, it is time to recognize that proper resource management, not waste management, is at the heart of reducing waste sent to landfills and towards a sustainable society.

At the same time, certain stakeholders groups must also have a Paradigm Shift and realize that new technologies are not big bag Boogie Man for the environment and have a place in the Zero Waste world.

The question to ponder is how we succeed in accomplishing our goal of Zero Waste in California. I think a big part of that success depends on ensuring that existing and proposed laws and regulations do not pose a barrier in the Zero Waste California efforts. We also need to be cognizant of cross-media issues and work with all affected agencies so we move forward and not work at cross-purposes.

The Waste Board has taken the Zero Waste initiative head-on. Like any good agency does, it developed a Strategic Plan. One of the primary goals of the Waste Board is to promote a "zero-waste California" where the public, industry, and government strive to

reduce, reuse, or recycle all municipal solid waste materials back into nature or the marketplace in a manner that protects human health and the environment and honors the principles of California's Integrated Waste Management Act. Forums such as this one today help the Waste Board realize that goal by involving the public, industry, and government sectors.

In closing, currently we have a growing population faced with limits of resources from the environment. We understand that our society and industrial systems must begin to mimic nature and move from being primarily linear to being cyclical. Each material must be used as efficiently as possible and must be chosen so that it may either return safely to a cycle within the environment or remain viable in the industrial cycle. The only limiting factor in our success is the boundaries of our imagination and like Albert Einstein said "Imagination is more important than knowledge."