

SUSTAINABILITY TIMES

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Introducing Zero Waste Operations – Research and Consulting

Zero Waste Operations – Research and Consulting (ZWORC) is a new organization established to help American and global industry adopt fully sustainable operations. We envision a future in which leading companies in every industry develop and maintain operations that are economically viable and environmentally sustainable for the long-run. And we plan to contribute to making this vision a reality through conducting research to better understand how operations can reach maximum effectiveness, efficiency, economic viability, and environmental acceptability; freely sharing the results of our research with the world; and assisting individual organizations in transforming their operations.

ZWORC is making presentations at professional conferences, publishing articles, and providing professional seminars and workshops to spread the zero waste approach to developing lean, green, fully sustainable production and service operations. There is much work to be done to save companies, save jobs, improve the economy, and end humanity's dangerous pollution of our environment.

We hope you will find that this monthly publication can help your company to be a better corporate citizen while at the same time being secure and profitable. For even more information, please visit our website at www.zworc.com.

Founder's Corner

A Convenient Truth

By Gary Bergmiller

Zero Waste Operations -- Research and Consulting was founded to assist industrial organizations in becoming truly sustainable in preparation for our future of dwindling natural resources and increasing demand. We at **ZWORC** are committed to sharing our message that being Green brings in the greenbacks and that the Greenest companies are also the Leanest.

That's why you will find the integration of ideas coming from Lean Production and ideas coming from environmentalists as you read our materials and attend our workshops. Just as global warming caused by human activities is a very inconvenient truth, the knowledge that saving the environment and saving the company are two sides of one coin is a very convenient truth. Welcome to the *Sustainability Times*.



Green Is Not Enough

By Paul McCright

Here at **ZWORC** we believe the time has come for human activities to be redesigned to stop using our non-renewable natural resources at a rate that will exhaust them in mere decades. We also believe we must stop creating various forms of pollution that render our streams, oceans, land, and air deadly to plants, animals, and humans. And, we believe we must curtail the creation of greenhouse gases that are contributing to climate change that is potentially devastating to our very existence.

Some would say the use of non-renewable resources and the pollution of our world is primarily the fault of industry and that industry must be made to bear the cost of changing so our future is assured.

We at **ZWORC** do not point a finger of blame and accusation at industry. For it is industry that is responsible for the good things in modern life, providing us with shelter, food, freedom to move about, communications with others, comfort, and pleasures. It is we who allow industry to exist by buying its products and services. No person or company or government agency is responsible for the state of our environment. It is the collective development of the modern life-style that has led to our environmental issues.

Industry must become Green if the human era on Planet Earth is to extend into future millennia.

Any company must strive to meet the widely divergent needs of its constituencies: shareholders who demand profitability, employees who demand competitive salaries and benefits, customers who demand high quality low cost products, regulatory agencies who demand that rules be followed, and citizens who demand reduced environmental impact from industrial activities. We believe companies must meet all these needs while focusing efforts to “green up” their operations. The only companies that will ultimately be able to generate products and services in environmentally friendly ways will be those that also have the financial ability to meet their constituents’ needs.

This means environmental sustainability is not really obtainable without economic sustainability of the industrial sector. This is why it is not enough to be green; industry must also be in the black. *Economics and environment must not be seen as competitors but as two necessary elements of long-term sustainability.*

Industry must make changes. These changes must be environmentally sustainable and they must be economically sustainable. We believe efforts to achieve both simultaneously are what the world needs now.

Conferences



Zero Waste Operations at IEEE



On April 17, 2009, Paul McCright, **ZWORC** Co-Founder, presented two papers at the first annual Institute of Electrical and Electronic Engineers' Green Technology Conference in Lubbock, TX (www.ieeegreentech.org). The papers, co-authored by Gary Bergmiller were "A Zero Waste Management Strategy to Reduce the Cost of Alternative Energy" and "Techniques for Enhancing Sustainability of Industrial Operations." The papers were published in the conference proceedings and the synopsis and full text of each may be found online at www.zworc.com/site/publications.html. **ZWORC** salutes IEEE for its vision in establishing this conference and looks forward to many more years of involvement with it.



Zero Waste Operations at IIE

On May 31, 2009, Paul McCright, **ZWORC** Co-Founder, presented three papers at the Industrial Engineering Research Conference in Miami, FL (www.iienet2.org/annual2/). The papers, co-authored with Gary Bergmiller, were "Parallel Models for Lean and Green Operations," "Are Lean and Green Programs Synergistic?" and "Lean Manufacturers' Transcendence to Green Manufacturing." The papers were published in the conference proceedings and the synopsis and full text of each may be found online at www.zworc.com/site/publications.html.

On June 1, 2009, Gary Bergmiller, **ZWORC** Co-Founder, presented "Zero Waste Operations – An Integrated Model for Lean and Green Production" (co-authored with Paul McCright) at the Institute of Industrial Engineers Annual Conference in Miami, FL (www.iienet2/annual2/).

These conferences are jointly presented by IIE each year. The 2010 conferences will be held in Cancun, Mexico.

Did You Know ... ?

Lean Programs can help a company be effective and efficient, competitive and profitable. *Green Programs* can help a company be environmentally sustainable. Taken together in a *Zero Waste Operations Program*, these programs are synergistic and can help the company be **fully sustainable!**



Workshops

ZWORC Co-founders *Dr. Gary G. Bergmiller* and *Dr. Paul R. McCright* presented a sustainability workshop to over 30 Environmental, Health, and Safety professionals from Bausch and Lomb's worldwide operations in October, 2008. The results of our research to explore the synergy between Lean and Green Programs was summarized and groups identified waste streams common to their processes, identified waste reducing techniques that show potential for reducing or eliminating these wastes, predicted what business results would be improved if wastes were reduced, and developed tentative action plans for transforming the processes. The meeting was held at the historic Vinoy Hotel in downtown St. Petersburg, Florida.

Waste Reduction Technique of the Month

Recycling



Everybody knows recycling is good for the environment, but do you really know how good it can be for your company? Do you know how much you spend each year to have someone cart your trash to the local dump? Ask your financial manager how big the checks are that go to the waste haulers. You will probably be quite surprised. This is an expense category that often goes unnoticed, considered a necessary evil by most, and factored into the company's overhead charges, which means no one in the organization is likely to really try to reduce it. But it can be reduced, sometimes by as much as 80% to 90%.

Depending on exactly what materials are in your trash, you may be able to save significant portions of your disposal fees while at the same time creating a new revenue stream for your company. Have your materials manager look into the markets for the things you throw away: material edges, scrap, broken or obsolete parts, packaging materials, etc. By starting with those materials that constitute the greatest percentage of your waste, you may realize a quick income to support the costs associated with recycling. You can also benefit by making your waste more visible to everyone in the company. Perhaps there are ways to recycle the material internally. This is the best form of recycling because it eliminates the transportation costs (and greenhouse gasses produced and non-renewable energy used) when moving your recyclables to a point of use elsewhere. Visibility of the wastes also helps employees understand the importance of not generating this stuff in the first place.

Try a "dumpster diving" exercise with employees. Put out a large tarp in an area in the parking lot and literally dump the contents of a dumpster there. Looking through the waste will be a real eye-opener. See details at www.zworc.com.

So recycling is great, but internal recycling is better, and waste prevention is the best.

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