10 Profitable "Green Strategies

Help Your Profits and the Planet

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ABSTRACT

This article describes ten cost-effective strategies to help organizations reduce their environmental impact. This collection is from discussions/feedback from thousands of people who have attended training classes on energy efficiency and/or carbon reduction strategies. All of these ideas may not work at every business location, but hopefully you can apply a few to improve your profits and help the planet. The first 3 strategies are "basic" philosophical approaches, while the remaining strategies are more tactical.

THINK DIFFERENT AND ELIMINATE "HIGH CARBON" PROCESSES

Usually, the best "green" solutions involve "un-doing" a solution to another problem that doesn't really exist anymore. For example, why try to minimize the energy consumed by a fax machine, if your business really doesn't need the fax machine anymore (due to scanning and digital technologies)? If you can eliminate the machine, you eliminate the maintenance, supplies, and energy required for the machine too, and that saves money. Another example might be avoiding the need for lawn pesticides by landscaping with native plants, which also require low amounts of water. Now you have eliminated a lawn mower and the gas required to run that mower, as well as the emissions from the mower.

When you really sit down and think about what your business needs today, it is amazing how much "junk" you can eliminate. If you can eliminate that "junk," you may be able to donate it to someone else and get a tax write-off (and it may be "treasure" to them). To get started, have a brainstorming session with your employees/team and

ask why you have these processes and keep asking "what is so good about that" until you find a "greener" way to get what you need in today's world. Many Fortune 100 clients have done this, and the results are amazing: improved profits and reduced environmental impact.*

Someday, people may think of air as an asset that we "own." Every time we generate carbon emissions, we are basically dumping pollution into that asset. Perhaps we should call it "littering," because that is exactly what is happening, we just don't see the litter (emissions) as well as we can see trash on the road. So think about what you are doing and eliminate the big emitters if you can.

If you can eliminate processes that consume an unfair share of resources, you will limit your price risk when the cost of those resources escalates. *For example, you probably have changed your car-driving habits in the last year due to gas price escalation.* In your organization, to truly get people to eliminate processes (some may view this as a sacrifice), we must think differently and assign meaningful values to limited resources. *For example, tell someone to "conserve" and it means nothing. However, it might mean more to them if you tell them that for every page we print, it kills part of a tree! Or if we recycle a ton of paper, it saves 17 trees!*

Companies that are ahead of the game are encouraging employees to consider the environmental costs that their actions (and company processes) create. As carbon emission legislation is inevitable, proactive companies are already incorporating these social costs *before their competitors*. Additional marketing benefits include claiming emissions savings from eliminating processes or recycling, but we will discuss this later.

Beyond carbon, there are many other ways to save money (and improve morale) by leveraging the famous "3 Rs": reduce, reuse and recycle.

STOP THE BLEEDING

After eliminating processes, the next best action is to minimize waste/emissions produced from the processes you need. For buildings, a good start is to identify where energy/resources are being used and set up systems to eliminate unnecessary consumption when not needed.

*An exercise within the Carbon Reduction Workshop Course.

This can involve configuring controls on lighting and HVAC systems, training for personnel, etc. In a manufacturing plant, fixing compressed air, steam, or water leaks are good examples that have the quickest returns or "simple paybacks."* After turning off equipment when not needed, look to energy efficiency technologies for further savings.

MEASURE TO MANAGE

Success is simply defined as getting from point A to point B, so it is dependent on measurement. Although in its infancy, measurement standards are being developed to define what is "green." Beyond measuring and managing energy, carbon emissions will be a new "key performance indicator" of organizations. *There are talks of having products with labels that include the product's "carbon footprint." It may be very similar to the nutrition information that is on all food products.*

Therefore, to manage and reduce their "footprints," organizations must first begin to measure carbon emissions in an accurate way, which is compliant with global standards. Again, the good news is that there are many ways to reduce carbon emissions, which can lead to not only cost-savings measures, but also revenue enhancement! Measuring carbon emission is more complex than measuring energy (due to differences in emission sources from fuel choices), but the savings can be great when you know where to look. It all starts with an audit of your carbon emissions. For a free carbon audit, visit: www.freecarbonaudit.com.

If you are a manufacturer and would like a free energy audit, you may qualify for one from the Industrial Assessment Center program (which sends a team of energy specialists to identify energy and waste minimization projects in your facility). You can learn more here: http://www1.eere.energy.gov/industry/bestpractices/iacs.html.

SET UP A FUNDING MECHANISM FOR YOUR "GREEN" PROGRAM

Believe it or not, you can get free money to fund your "green" programs/projects. Below are some examples:

*Data from over 13,000 assessments conducted by the Department of Energy's Industrial Assessment Center Program

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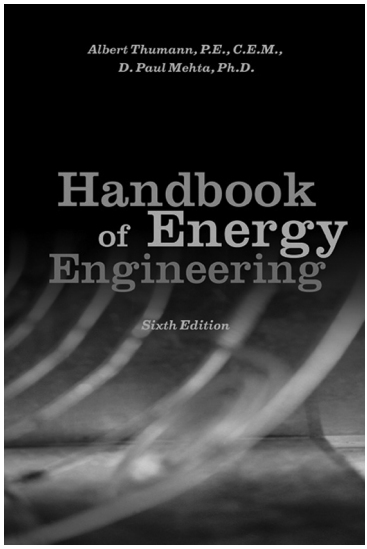

Albert Thumann, P.E., C.E.M., and D. Paul Mehta, Ph.D.
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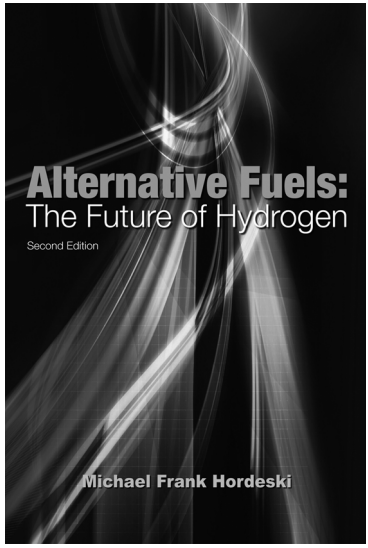

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- Set up a company credit card that gives cash back towards a "green fund."
- Set up a "green fund" (non-profit organization) and give employees the option to donate to it, just like they currently do for the Red Cross or United Way. No matter what a person's religious/political views are, we all breathe the same air, and your "green fund" would be used to fund projects that help EVERYONE. You could use this fund to pay for highly visible projects (such as solar, wind, hybrids, etc.) on your site or within your organization. *In addition, you could possibly sell the carbon credits from those projects.*
- Utilize an innovative solution/partnership to build revenue without costs. For example, GreenTravelPartners.com is a program that donates the travel commissions back to the organization for use in green projects/programs. You could utilize this program (a partnership with Expedia, Travelocity, etc.) or set up a similar program structure for other services you purchase online.
- As a marketing technique, your company may choose to donate a percentage of revenue back to the environment. The funds collected could flow through your own "green fund" for projects completed on your business site. This approach has helped companies increase sales, while getting many good projects completed.

LEVERAGE UTILITY AND TAX REBATES/CREDITS

Again, it is free money that can be used to fund a project/program. There is a great list of available resources listed by state at: www.dsireusa.org.

LIGHTING PROJECTS

Lighting technology continues to improve every year, and the paybacks are some of the quickest in the energy field. Some of the most popular upgrades right now are:

- Switch from high-intensity discharge lamps to high-bay fluorescents.
- Upgrade to LEDs for signs, specialty lighting and even

incandescent in certain applications. Note on LEDs: Because some LEDs can be used to change the color of a space at different times of the day, they have the ability to enhance the ambiance of an environment, which can be used to attract more customers in a retail environment.

POWER PURCHASE AGREEMENTS FOR RENEWABLE PROJECTS

Similar to performance-based contracts, the power purchase agreement (PPA) allows you to get solar on your roof at no upfront costs. Basically, a third party pays for the materials and installation, and they "sell" you the power generated (from the solar cells on your roof) at rate competitive with your utility. Contracts can vary, but many of the solar projects implemented in California in 2007 and 2008 utilized this unique financing mechanism.

BUILDING COMMISSIONING AND RETRO-COMMISIONING

"Commissioning" means ensuring that installed systems are operating as designed. In many buildings (even new ones), there are opportunities for improvement as many systems are not operating properly either through incomplete installation, or via a retrofit (where the original design intent may have been lost). As buildings age or organizations change, maintenance practices need to be adjusted and/or systems should be "retro-commissioned" to avoid unnecessary waste. Studies show that commissioning practices can reduce system operational costs by 5 to 10 percent or more.

GREEN MARKETING

Not "green washing!" Getting credit for your "good" energy/environmental work is often not done well by engineers. There are some good ways to express the environmental benefits (of your projects) in ways that your CEO (and the public) can appreciate. For example, instead of saying a project will save "X" kilowatt-hours, show that these avoided kWh represent avoided power plant emissions that are

equivalent to planting "Y" trees. People can visualize trees, but have a hard time visualizing what a ton of CO_2 emissions looks like. To help you quantify the environmental benefits of your energy-saving projects (barrels of oil not consumed, etc.), you can download a free spreadsheet at profitablegreensolutions.com (look under the "resources tab"). Figure 1 shows a screen shot of the spreadsheet.

Alternatively, if you want to demonstrate the environmental impact of your current operations (to get people motivated to change), there is a free carbon audit tool (FreeCarbonAudit.com) which is very helpful. See Figure 2.

In addition, if you have one, leverage your marketing department to get your project approved. More often than not, they will be excited about the project you are working on, it helps them develop "authentic" green marketing messages for their company, which can improve profits.

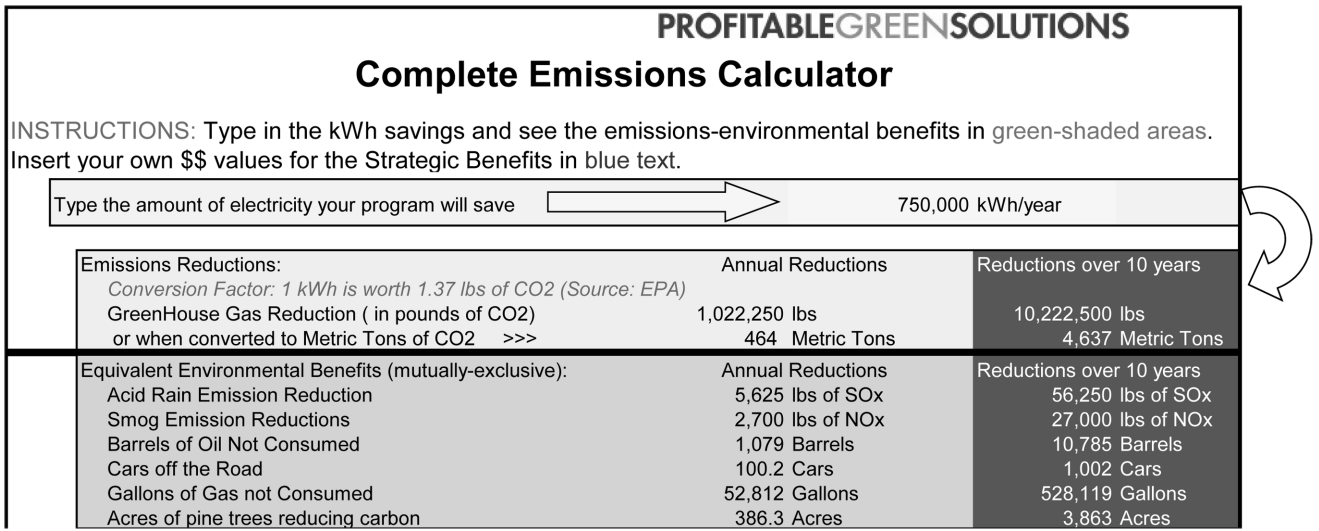
PARTNER

Due to the rapid pace at which new energy/environmental/carbon technologies are being developed, it is literally impossible for one person (or organization) to know about all the savings possibilities. It is best to partner with professionals and service companies that are specialists in particular fields such as solar, wind, recycling, chemicals, carbon emissions auditing, etc. Often, their expertise will add significant value to a program/project and reduce costs as well as time wasted.

To demonstrate the breadth of knowledge required to "green" a business, see the green certification checklist of the Monterrey Bay Area Green Business Certification program: http://www.montereybaygreenbusiness.org/. It is a great comprehensive list of green tactics, which can be good discussion points for your team. Go there now and download the checklist; you will get some great ideas!

CONCLUSION

Obviously, producing a "top ten" list in this rapidly changing field is a little ridiculous. However, CEOs and leaders all over the world are looking for profitable solutions. To be direct—THEY ARE LOOKING



PROFITABLEGREENSOLUTIONS

Complete Emissions Calculator

INSTRUCTIONS: Type in the kWh savings and see the emissions-environmental benefits in green-shaded areas.
Insert your own $$ values for the Strategic Benefits in blue text.

Type the amount of electricity your program will save	750,000 kWh/year

Emissions Reductions:	Annual Reductions	Reductions over 10 years
Conversion Factor: 1 kWh is worth 1.37 lbs of CO2 (Source: EPA)		
GreenHouse Gas Reduction (in pounds of CO2)	1,022,250 lbs	10,222,500 lbs
or when converted to Metric Tons of CO2 >>>	464 Metric Tons	4,637 Metric Tons
Equivalent Environmental Benefits (mutually-exclusive):	**Annual Reductions**	**Reductions over 10 years**
Acid Rain Emission Reduction	5,625 lbs of SOx	56,250 lbs of SOx
Smog Emission Reductions	2,700 lbs of NOx	27,000 lbs of NOx
Barrels of Oil Not Consumed	1,079 Barrels	10,785 Barrels
Cars off the Road	100.2 Cars	1,002 Cars
Gallons of Gas not Consumed	52,812 Gallons	528,119 Gallons
Acres of pine trees reducing carbon	386.3 Acres	3,863 Acres

Figure 1

Carbon Footprint Calculator

INSTRUCTIONS: Type in the kWh and MMBtu (of Natural Gas) you use each year. The calculator will give you a preliminary estimate of your Carbon Footprint (as what it means). *Example numbers are supplied.*

Type the amount of Electricity you use	750,000	kWh/year
You can find this information on your utility bills…		
Type the amount of Natural Gas (Methane) you use	50,000	MMBtu/year

Annual Emissions Report

Electricity-Related Emissions (Indirect Emissions from Power Plants):	464	Metric Tons of CO_2
Methane (Natural Gas) Emissions from Stationary Combustion:	2653	Metric Tons of CO_2
TOTAL Emissions (Preliminary- Ignores CO_2e emissions)	**3,117**	**Metric Tons of CO_2**
Your Total Emissions are Equivalent to:		
Barrels of Oil Being Burned	*7,248*	*Barrels per year*
Cars on the Road	*571*	*Cars per year*
Gallons of Gas Being Consumed	*353,782*	*Gallons per year*
Energy Used by This Many Homes	*275*	*Homes per year*
Acres of Pine Trees Being Cut Down	*708*	*Acres per year*

Figure 2

FOR SOLUTIONS FROM YOU. This is a special time for energy/environmental engineers, as you can become the CEO's hero. The author challenges you to become that hero!

ABOUT THE AUTHOR

Eric A. Woodroof, Ph.D., CEM, CRM, shows clients how to make more money and simultaneously help the environment. During the past 15 years, he has helped over 400 organizations improve profits with energy-environmental solutions. He has written over 25 professional journal publications and his work has appeared in hundreds of articles. Dr. Woodroof is the chairman of the board for the Certified Carbon Reduction Manager program and he has been a board member of the Certified Energy Manager Program since 1999. Dr. Woodroof has advised clients such as the U.S. Public Health Service, IBM, Pepsi, Ford, GM, Verizon, Hertz, Visteon, JPMorgan-Chase, universities, airports, utilities, cities and foreign governments. He is friends with many of the top minds in energy, environment, finance and marketing. He is a corporate trainer, keynote speaker, and founder of www.ProfitableGreenSolutions.com.

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