The Greening of IT: How Companies Can Make a Difference for the Environment
Book Review by Clea Zolotow

Dr. John Lamb has a Ph.D. in engineering science, which is quite apparent in reading his book, "The Greening of IT." This book provides a welcome relief from the many books that center around virtualization as the panacea for energy utilization. While "The Greening of IT" does have virtualization as one of the steps required for lowering energy utilization, it takes an engineering approach. He says, "This book provides details on the importance of implementing green IT….and especially the case studies for 'lessons learned' and the best practice approaches for implementing green IT."

Dr. Lamb provides a global view of Green IT. This is appreciated as he puts Green IT in a world-wide perspective, detailing why we need to save energy. The global view of Green IT continues by placing it squarely in the roadmap for "reducing greenhouse gases which, in turn, can help reduce global warming," a goal for both the United Nations (UN) as well as the White House.

Throughout the book are sprinkled engineering explanations such as the difference between volts, watt, amps, KWHs and voltage levels. As another example, Dr. Lamb's explanation of "Data Center Cooling Basics" clarifies HVAC systems, the cooling equipment, and new technology (such as stored cooling, thermal storage systems, and phase change materials.

Dr. Lamb uses IBM's 5-step program for datacenter efficiency: diagnose, manage and measure, use energy-efficient cooling, virtualize, and build new or upgrade facilities when feasible.

Then there are two sections which I have not found in other books: (1) tuning your applications to require less CPU and (2) Greening your laptop. Tuning applications often does not happen as we virtualize applications and consolidate them rather than looking inside the application to use less CPU. Many applications can be tuned to use 25% less hardware then today, however, requires time as the original application developer is usually not still employed by the corporation. Greening our laptops is a good idea as well and is a great step to helping use less energy. Dr. Lamb gives the instructions in his book for Power Management Features and provides the option of utilizing a thin client PC for corporations as well. (Maybe PROFS will come back, the original thin client application by IBM, known either as Professional Office System or PF Keys Rigidly On Freakish Settings).

Dr. Lamb's section on collaboration is interesting as it discusses the need for IT vendors to "integrat(e) their hardware, software, and services" to help customers improve their energy initiatives. Further, there is a good overview of IBM's energy monitoring programs as well. The part where Dr. Lamb allows himself to go back to more engineering-related topics where is really interesting. The chapter on "The Magic of 'Incentive' -- The Role of Electric Utilities" and "PG&E Lead Utility Energy Efficiency

Coalition" of the impact of energy companies on the Greening of IT and available incentive programs. This type of explanation, looking outside the typical datacenter and to the energy companies, was new to me.

The section on virtualization is made more interesting by the SPEC metrics for virtual servers. Note that older frame's utilization is not tied to their power consumption. Newer, greener frames use more power as the utilization rises. What is not covered here, however, is the re-platforming of servers from, for example, a system p environment to a system z environment. IBM Enterprise Computing Model (ECM) has re-platformed hundreds of pSeries LPARs into a z/Linux box and reduced all costs as well as lowered energy utilization. Maybe Dr. Lamb will put that in his next book.

In all, the 5-step approach for an "Energy Efficient Data Center" – Diagnose, Build, Virtualize, Manage and Measure, and Cool – provides corporations a look at their datacenter energy costs and find ways to improve their energy utilization and their virtualization penetration. The emphasis on measurement throughout the book is very important as Dr. Lamb provides methodologies for baselining (what to baseline) as well as energy-measurement tools. The book ends with appendices and checklists to actually do this work. This is not a theoretical book for anyone dealing with high energy costs, it is a must-read to put a team in place to Go Green!