

## ***Green IT is Front and Center as Economic Forces and Government Regulation Converge to Force Changes***

*Transcript of a BriefingsDirect Podcast on the move toward Green It and what companies can do to improve energy efficiency and reduce their carbon footprint, while saving money.*

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**Dana Gardner:** Hi, this is [Dana Gardner](#), principal analyst at [Interarbor Solutions](#), and you're listening to BriefingsDirect.



Today, we present a sponsored podcast discussion on [Green IT](#) and the many ways to help reduce energy use, stem carbon dioxide creation, and reduce total IT costs, all at the same time. We're also focusing on how IT can be a benefit to a whole business or corporate-level look at energy use.

We'll look at the current state of how IT uses energy, common approaches to help conserve energy, and how IT suppliers themselves are making green a priority in their new systems and solutions.

Here to help us better understand the issues, technologies, and practices impacting today's enterprise IT installations and the larger businesses they support, we're joined by five executives from [Hewlett-Packard \(HP\)](#). Please join me in welcoming them. We're here with [Christine Reischl](#), general manager of HP's Industry Standard Servers. Welcome, Christine.

**Christine Reischl:** Welcome.

**Gardner:** We're also here with [Paul Miller](#), vice president of Enterprise Servers and Storage Marketing at HP. Hello, Paul.

**Paul Miller:** Well, thank you.

**Gardner:** [Michelle Weiss](#), vice president of marketing for HP's Technology Services. Welcome Michelle.

**Michelle Weiss:** Hello.

**Gardner:** [Jeff Wacker](#), an [EDS](#) Fellow. Welcome, Jeff.

**Jeff Wacker:** Thank you. Glad to be here.

**Gardner:** Lastly, [Doug Oathout](#), vice president of Green IT for HP's Enterprise Servers and Storage. Welcome Doug.

**Doug Oathout:** Good afternoon. Thank you.

**Gardner:** Doug, let's stick with you. Tell us a little bit about what the major concerns are for those who are consuming IT and apparently trying to reduce the amount of energy that they're consuming as well?

### *Cost of energy*

**Oathout:** The major issue that customers are wrestling with is the current cost of energy. The current cost of energy continues to rise. The amount of energy used by IT is not going down. It continues to rise. So, it's becoming a larger portion of their budget. They're very concerned with managing their expense and, therefore, want to look at energy use and how they can reduce it, not only from a [data center](#) perspective, but also from consumption of the monitors, printers, and desktop as well. So, the first major concern is the cost of energy to run IT.



The second one they run into is that they want to extend the life of their data center. They don't want to have to spend \$10 million, \$50 million, or \$100 million to build another data center in this economic environment. They want to extend the life of their data center. So, they want to know anything possible, from best practices to new equipment to new cooling designs, to help them extend the life of the data center.

Lastly, they're concerned with regulations coming in the marketplace. A number of countries already have a demand to reduce power consumption through most of their major companies. We have a [European Code of Conduct](#), that's optional for data centers, and then the U.S. has regulation now in front of Congress to start a [cap-and-trade](#) system.

As regulations get passed around the world, clients and customers are going to have to react to them, and they're going to have to know how much energy they're using, as well as their carbon footprint, so they can act upon it to meet the regulatory environment.

**Gardner:** So, Doug, this is by no means just a "nice to have," this is pretty much a "must-do."

**Oathout:** This is a must-do. The environment is saying, "You've got to reduce cost," and then the government is going to come in and say, "You're going to have to reduce your energy." So, this is a must-do.

**Gardner:** The role of IT is I suppose, fairly prominent, and not just a rounding error.

**Oathout:** No, it's a big opportunity for the clients, because they can use IT to fix their inefficient processes or to fix how things are running. They can use IT to put intelligence behind some of their processes to reduce the amount of energy and carbon they produce.

**Gardner:** That means that IT perhaps is more of a solution to the general energy problems than simply the amount of energy that it consumes as a department?

### ***Backbone of digitization***

**Oathout:** It's exactly that. IT can multiply the effects of intelligence being built into the system. IT is the backbone of digitization of information, which allows smart business people to make good, sound decisions.

**Gardner:** Let's go to Paul Miller now. What are some common issues that you're seeing among the users of your services and solutions at HP? What's the common thought around some of your infrastructure efficiency demands?

**Miller:** One of the key issues is who owns the problem of energy within the business and within the data center? IT clearly has a role. The CFO has a role. The data center facilities manager has a role. One of the key issues, when we go into a customer, is determining who owns the problem and who owns the decision to change the problem?



The other key element, and we talk about this, is that you can't manage what you can't see. There are very limited tools today to understand where energy is being used, how efficient systems are, and how making changes in your data center can help the end customer.

That's where HP has assembled a set of tools and services that can come in and help customers instrument their data centers. Our expertise in knowing where and how changes to different equipment, different software models, and different service models can drive a significant impact to the amount of energy that customers are using and also help them grow their capacity at the same time.

We recently introduced a product called our [Environmental Edge](#), which instruments an entire data center from those to services to help customers deploy and build brand new data centers.

Technologies like our containers, which we call our [Performance-Optimized Data Center \(POD\)](#), have been designed specifically to enable customers to achieve the highest power utilization and lowest cost for building out a data center. Those are some of the options that we can bring to a customer that has infrastructure energy issues.

**Gardner:** When we factor in the cost of energy, it seems that the [return on investment \(ROI\)](#) equation moves quite a bit closer to a short-term calculation. Is there some sort of an energy arithmetic that you're seeing among folks, as they examine their spending?

### ***Everyone needs rapid ROI***

**Miller:** In today's economy, everyone needs an ROI that's as quick as possible. It's gone from 12 months down to 6 months. With our new [ProLiant G6](#) servers, the cost and energy savings alone is so significant, when you tie in technologies like virtualization and the power and performance we have, we're seeing up to three months ROI over older servers by companies being able to save on energy plus software costs. It's just not focusing on the energy as energy's sake, but also looking at the efficiencies of the rest of the data center that we take into account.

**Gardner:** Does the general movement towards conservation across the corporation require a bit of an organizational shift? Do the folks in IT now need to relate to other groups in the organization that they perhaps didn't have to before?

**Miller:** Absolutely. As I mentioned earlier, typically, the energy costs come at an aggregate level of facilities organizations, and being able to communicate what changes we can make from an IT standpoint into those organizations is critical. It goes all the way up to energy utilization being a corporate issue in helping build the corporate brand by implementing technologies that help a corporation put on a green set of initiatives and help build the entire brand for the company.

**Gardner:** Let's go next to Christine Reischl. Christine, with millions literally of servers pouring off of assembly lines, what do you do in terms of bringing energy efficiency into the design? Is there a great deal being done across the life cycle of the products themselves?

**Reischl:** Yes. Energy efficiency is one of our critical design objectives for our product, and we have been innovating in power cooling and software for years now. We have quite a significant amount of HP Lab activity going on with process applications, and so forth. Our customers are benefiting from that hardware right now.



As an example, the G6 servers, the new generation of our x86 servers, which use 50 percent less power, are 50 percent more energy efficient and have 50 percent less power utilization than servers sold several years ago. In addition to that, there is a claiming capacity possibility, as well as extending the life of the data center.

How did we do that for our G6 servers? It was really coming with innovation. The first one, as an example, involves the Sea of Sensors, which are 32 smart thermal sensors across our servers that constantly optimize the energy use, the fan speed, and the acoustics.

Another example is the [Dynamic Power Capping](#), where we have a safe way of limiting the power draw or power consumption without impacting performance, so that customers can really fill up their racks and up to triple their service in the data center.

Another example is the common power supply, which allows the power supply to run at efficiency levels of 92 percent and above, which again helps with the power consumption tremendously. Those are the examples of our G6, a broad new generation of [x86](#) servers which came out end of March and is here, filling out the portfolio.

At the same time, we also have announced just recently a new product family, the SL product family, which allows for specific energy savings of 30 percent for a current generation of products. This is specifically, from a design objective, targeting a low-Watt environment per server.

**Gardner:** As we pointed out earlier, this whole ROI equation is so important, assuming that we're only getting a certain distance into what's potentially possible at energy savings. How far into this potential efficiency drive do you think we are?

### ***Continuous innovation***

**Reischl:** Well, we have been investing in that area for several years now. We will have an energy power cooling roadmap and we will continuously launch innovation as we go along. We also have an overall environment around power and cooling, which we call the Thermal Logic environment. Under this umbrella, we are not only innovating on the hardware side, but on the software side as well, to ensure that we can benefit on both sides for our customers.

In addition to that, [HP ProCurve](#), for example, has switches that now use 40 percent less energy than industry average network switches. We also have our [StorageWorks Enterprise Virtual Array](#), which reduces the cost of power and cooling by 50 percent using thin provisioning and larger capacity disks.

So, not only are we talking about servers, but we are also talking about storage and ProCurve switches in this context. The greater HP environment around innovation is on those greater types of divisions and engagements.

**Gardner:** I've gotten questions about Energy Star ratings and what that means. Are there certain incentives in terms of whether you adopt an Energy Star-rated device or not, how does that work?

**Reischl:** The high-volume products or our G6 servers have the [Energy Star](#) rating. Clearly, what it documents and demonstrates is that we are the only ones in the industry who are able to certify for Energy Star, which again speaks to the fact of how power- and cooling-efficient our servers are. That is clearly a big benefit for winning deals and helping our customer to operate efficiency.

**Gardner:** Thank you so much. Michelle Weiss, when it comes to people and process, when we look at solutions level approaches to IT and overall energy conservation, what is HP doing? What are some of the general solution approaches to helping your customers get greener?

**Weiss:** Well, Dana, for us it's pretty simple, because it's really all about helping clients use their resources -- using what you've got more efficiently and effectively.



You can start with those infrastructure resources. We just heard Christine speak to those and Paul as well. We can help clients with things like consolidation, whether simple consolidation or all the way up to a big data-center consolidation, like HP did, going from 85 data centers down to 6 locations.

We could help with virtualization. We could also help with networking, a more efficient network design, or more efficient installation. Christine spoke about storage. We could certainly go to and help people profile their data to see if there is wasted space or if the data needs to be tiered or consolidated.

Obviously, we're talking about energy and energy-efficiency analysis. Paul was talking about the facilities and the IT person coming together and having a discussion.

### ***Hands-on assessment***

We can go in and do a hands-on assessment of the actual power use in the data center and provide people with a report that says, "Here's what you're using and here's our recommendation." We can go from a very low cost recommendation, like, "You should shut down an air conditioner," all the way up to a very extensive recommendation.

Let me talk for just a second about the human resource, because you spoke about that, and I think it's an often-overlooked area about getting more efficiency out of our human resources.

We have a lot of HP education, very much geared for IT personnel around getting them more capable and effective around technology areas like virtualization. But, we also have a lot of capability to help people with training in the use of things like videoconferencing with [Halo](#) technology, etc. So, it's all of those things together, using those resources more efficiently.

**Gardner:** Now, there is more than energy when it comes to being green. There is reducing waste, recycling, and examining the lifecycle of a device from cradle to grave, and then also being mindful of how to properly dispose of those parts that can't be recycled. Tell us about the solutions are for how equipment gets sunset.

**Weiss:** This is a really interesting area. I don't know if you know this, Dana, but by 2010, HP will have recycled over two billion pounds of product. For someone that's always trying to lose weight, I think about that -- my God, that's a lot of product.

We've won a lot of recycling awards throughout the U.S. and abroad. We we're the first computer company to actually have a recycling plant -- it's actually located near to me -- which we opened about a dozen years ago. So, we do a lot of that.

We also provide other options for disposal, other options to purchase recycled or refurbished products for our customers, and we also have [HP Financial Services](#) that come in and ensure that IT equipment that has passed its prime can actually be disposed of in a way that will help meet local environmental laws. We have a lot of work on asset recovery and a lot of work on that end stage of the lifecycle.

**Gardner:** Is there a great deal of education that needs to take place with IT? Are IT folks generally already thinking about life cycle and recycling, or is this an educational issue as well?

### *Thinking of a lifecycle*

**Weiss:** It's both. IT tends to think in terms of a lifecycle. If you think about [ITIL](#) and all of the processes and procedures most IT people follow, they tend to be more process oriented than most groups. But, there is even more understanding now about that latter stage of the lifecycle and not just in terms of disposing of equipment.

The other area that people are really thinking about now is data -- what do you do at the end of the lifecycle of data? How do you keep the data around that you need to, and what do you do about data that you need to archive and maybe put on less energy-consuming devices? That's a very big area.

**Gardner:** Having high redundancy of data, of course, is basically wasted cycles, wasted electrons, and wasted money.

**Weiss:** Exactly. That footprint is very large when you really think about that entire supply chain of energy.

**Gardner:** Thanks so much. Let's go over to Jeff Wacker at EDS, an HP Company. As a fellow there at EDS, Jeff, tell us a bit about what EDS, as a very large global hosting organization, is doing in regard to going green.

**Wacker:** We're a services play. We look for total solutions, as opposed to spot solutions, as we approach the entire ecology, energy, and efficiency triumvirate. It's all three of those things in one. It's not just energy. It's all three.

My colleagues have talked very eloquently about data centers and hardware. I'll mention a little more on data centers. One of the things I wanted to bring up was that we look from the origination all the way through the delivery of the data in a business process. Not only do we do the data centers, and run servers, storage, and communications, but we also run applications.



You may not have heard of green applications, but, indeed, applications are also high on the order of whether they are green or not. First of all, it means reconciling an application's portfolio, so that you're not running three applications in three different places. That will run three different server platforms and therefore will require more energy.

It's being able to understand the inefficiencies with which we've coded much of our application services in the past, and understanding that there are much more efficient ways to use the emerging technologies and the emerging servers than we've ever used before. So, we have a very high focus on building green applications and reconciling existing portfolios of applications into green portfolios.

### ***How you use IT***

Moving onto the business processes, the best data delivered into the worst process will not improve that process at all. It will just have extended it. Business process outsourcing, business process consulting, and understanding how you use IT in the business is continuing to have a very large impact on environmental and green.

**Gardner:** Now, given that you have high stakes in cutting your cost and reducing redundancy and waste, I'd think this goes right to your bottom line as an outsourcer. What metrics of success do you use, how do you measure, and how do you know when you're doing the right things?

**Wacker:** It's a good question. There are a lot of metrics out there, and a lot of them were built with the efficiency of buildings in mind, and some, directly with data centers in mind. The defense council on integration and efficiency has created a [data-center infrastructure efficiency \(DCIE\)](#). There is a [power-usage effectiveness \(PUE\)](#), or essentially an inverse of one over the other. What they do is ask, "How many Watts does it take for you to run the infrastructure of the data center in order to drive a watt of power at a server?"

These are traditional metrics. Quite frankly, right now we, as well as others in the industry, are looking at new metrics, because it's both sides of the equation. You want an efficient data center. You want efficient use of the Watts that are going into the servers. So, you now have to consider how many partitions am I running, how smart are the power supplies and the fans on these servers, everything that's been talked about before.

Moving into the data center, we're looking at capabilities that are using, for example, air

handling in the proper locations that allow you not to use compression. Anybody who runs their air conditioner during the summer knows that a lot of their electricity charges are running that compressor, which is actually creating the cooling capability for their house.

If we are locating some of our data centers in locations where the air is of a certain temperature that allows us to run data centers without compression 97 or 98 percent of the year, you can imagine that we have created quite a bit of savings for us.

**Gardner:** That's true, of course, for your data centers. Other organizations that are looking at how to place their data centers, I suppose, have more sourcing options. We've heard a lot about [cloud computing](#) recently. How impactful is this long-term decision about how many data centers? I suppose also at the architectural level of what sort of applications and architectures you want to support, is this top of mind for all the folks you're dealing with?

**Wacker:** Well, it is becoming top of mind, and you've already identified the major culprit in this. That is that the cost of energy is going to continue to accelerate, and to be higher and higher, and therefore a major component of your cost structure in running IT. So yes, everybody is looking at that.

One of the things about what has been called cloud or [Adaptive Infrastructure](#) is that you've got to look at it from two sides. One, if you know where you're getting your IT from, you can ask that supplier how green is your IT, and hold that supplier to a high standard of green IT. That's the type of a standard that HP seeks to meet at all times.

But, not everybody who is going to be running computing infrastructure within the cloud is going to meet that. So, one of the big challenges of cloud computing is how green are they. You, as a corporation, have to identify all of your green for cap-and-trade or for the regulations. You're going to have to know that. So there are going to be some interesting disclosures that will be coming up as we move down the road.

### ***A two-sided sword***

On the other hand, cloud is, by its definition, moving a lot of processes into a very few number of boxes -- ultra virtualization, ultra flexibility. So it's a two-sided sword and both sides have to be looked at. One, is for you to be able to get the benefits of the cloud, but the other one is to make sure that the cost of the cloud, both in terms of capabilities as well as the environment, are in your mindset as you contract.

**Gardner:** Unfortunately, we're asking even more of our beleaguered IT executives and strategists. They're being asked to do more for less now in terms of productivity, but we're going to be asking them to do less in terms of their energy use, and then thinking outside the box when it comes to the sourcing options and how to factor the green across an ecology of providers.

I'd like to take the question to both Paul and Michelle. How do these IT strategists get a handle on this? What are some first steps for them?

**Weiss:** Let me start and then I can turn it over to Paul. One of the really clear things we have seen in our experience is that taking a set of uncoordinated approaches to this whole area just doesn't work. You really are better off if you have a top-down view of what you're trying to do. So, always understand your strategy and build the plan around that.

Certainly, we've got services both from our Technology Services organization and from Jeff in EDS about helping people make the case. As Paul was talking earlier today, many people are actually making the case to their CFO. It's no longer always a CIO concern.

We can help make that case in business language, because this is all about business technology. It's all about driving business outcomes. We can help make that case in plain business terms, either around energy efficiency that you can do, around adopting, for example, the G6 servers, or around a virtualization project. We can do that in business language.

**Gardner:** Paul, what sort of approaches won't work? The first thing that comes to my mind is doing nothing. It sounds like proactive is the message of the day.

**Miller:** Yeah, two things. One is doing nothing. The other is jumping at a lot of claims out there. There are multiple claims out there. Every time I see a press release or I see an advertisement, it has a claim on energy efficiency. As Jeff pointed out, you need to have an approach on this that looks at it from a data center, from a PUE, standpoint, and just not jump on the claim of the day.

The other element is that the claim of the day is done a lot around a specific application or a specific setup that may not be appropriate for your business. So, take time to research. Look for companies like HP that have power calculators that you can plug your own unique configurations into, but then go beyond that.

### ***Coordinated approach***

One of the other things, and this goes to what Michelle was talking about, is a coordinated approach. A coordinated approach is not just about buying energy efficient equipment. It's about managing them very effectively.

We have our power capping tool, which enables you to set specific power limits within the data center, so that you can guarantee an outcome for your energy, an outcome for your power, an outcome for your performance that you're going to have from a [service-level agreement \(SLA\)](#). Building intelligence into them is critical for the long-term success and long-term savings of power for your environment.

**Gardner:** A last set of questions. Doug, at this point, what should we expect in the future? Are we undertaking a journey and we're only in the very first steps, now that energy and the environment have become so prominent?

**Oathout:** Dana, this is an ongoing process. This process of energy efficiency never ends. As Michelle and Paul pointed out, once you undertake a simple assessment of figuring out how much energy you're consuming, where it's being consumed, then you develop a roadmap for virtualization, you develop a roadmap for consolidation, you develop a roadmap for application efficiency, then you start all over again.

It's an ongoing, continuous process improvement that you do every day, every week, every month. It's a journey that bears fruit. It can be a small project or it can be a large project, but the key is to have a snapshot of where you are today and then measure yourself on an ongoing basis on your progression.

The servers are more efficient than they were three years ago. Our storage is more efficient than it was three years ago. Our networking is more efficient. There are all different kinds of projects based on technology, but there is also technology in software and services that can help you gain even more efficiencies. This is the beginning of a never-ending process, but it does bear fruit on an ongoing basis.

**Gardner:** I have to imagine that a lot of people feel pretty strongly about this, and the community approach could be quite powerful. Do we have avenues for how folks in the field who might have some ideas themselves about process, technology, and perhaps even other aspects of this equation can contribute?

**Oathout:** We have both an internal and an external green website that is continually taking questions and being monitored for ideas. Our internal sales team can go through our green website, and our external clients and consultants can take advantage of HP's knowledge, as well, through our external green website.

**Gardner:** Well, I'm afraid we're about out of time. We've been discussing green IT and the many ways that IT can help reduce energy and play a larger role in the greenification of enterprises at large.

We've been joined by a panel of five executives from Hewlett-Packard. We've been joined by Christine Reischl, general manager of HP's Industry Standard Servers. Thank you, Christine.

**Reischl:** Thank you.

**Gardner:** Paul Miller, vice president of Enterprise Servers and Storage Marketing at HP. Thank you, Paul.

**Miller:** Thank you, Dana.

**Gardner:** Michelle Weiss, vice president of marketing for HP's Technology Services.

**Weiss:** It's been a pleasure.

**Gardner:** Jeff Wacker, an EDS Fellow. Thank you, Jeff.

**Wacker:** Thank you, Dana.

**Gardner:** And Doug Oathout, vice president of Green IT for HP's Enterprise Servers and Storage.

**Oathout:** Thank you, Dana.

**Gardner:** This is Dana Gardner. You are listening to a sponsored BriefingsDirect Podcast. Thanks for listening and come back next time.

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