

# GREEN ELECTRONICS COUNCIL

Advocating for sustainable IT by supporting both manufacturers and large-scale purchasers.



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COUNCIL

## 2017 STATE OF SUSTAINABLE INFORMATION TECHNOLOGY PROCUREMENT REPORT

# GEC STATE OF SUSTAINABLE IT PROCUREMENT REPORT

## INTRODUCTION

Most people could not imagine a workday that didn't include some type of IT product, be it a laptop, tablet or smartphone. Reflecting that reality, global spend on IT products continues to increase. IT spending by non-IT business units is projected to increase nearly 6% compared to 2016 levels, reaching \$609 billion in 2017. In addition, the growth is expected to continue, with IT spending by non-IT business units to see a compounded annual growth rate of 5.9% during 2015-2020.<sup>1</sup> With spend on IT products only increasing, the Green Electronics Council sees a tremendous opportunity to harness the power of institutional purchasers by providing them with information to procure sustainably designed and manufactured IT products.

Institutional purchasers play an immensely important role in helping drive greater levels of sustainability. By preferring sustainable versions of IT products, they create the demand to motivate manufacturers to change their product design, materials and production processes. IT is a significant spend category for many organizations and the Green Electronics Council, through our flagship program EPEAT, helps organizations identify and procure credible sustainable IT.

Changes in the technology landscape, increasing pressures to ensure sustainably sourced products and services and the presence of millennials in the workplace are having a combined effect on the goods and services companies buy. These factors are applying unique and unprecedented demands on procurement teams, and this report seeks to outline the changes that are already underway and anticipated in the future. The team at the Green Electronics Council has written this first State of Sustainable IT Procurement report to share what we have heard are factors driving institutional purchasers towards sustainable IT procurement.

The trends in this report are based on staff observations of industry shifts as well as research and information from in-depth interviews with a range of public and private sector purchasers.

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<sup>1</sup> "Technology Purchases from Line of Business Budgets Forecast to Grow Faster Than Purchases Funded by the IT Organization, According to IDC", March 23, 2017, <https://www.idc.com/getdoc.jsp?containerId=prUS42405217&pageType=PRINTFRIENDLY..>

## MILLENNIALS AND A SHIFTING WORKPLACE CULTURE

Millennials are the largest living population in the US,<sup>2</sup> with an estimated 79.8 million in 2016 (ages 18 to 35) compared with 74.1 million Baby Boomers (ages 52 to 70). With millennials projected to be 75 percent of the workforce by 2025<sup>3</sup>, they play an important role in an evolving workforce culture. This group is values-driven, expects their employers to engage in corporate social responsibility and expresses “great reverence for the environment.”<sup>4</sup> Millennials place a premium on aligning their values with those of the workplace, from sustainability to mobility to expecting that data is being collected and shared in a transparent manner.

### It’s Gotta Be Green....and Measurable

Millennials expect that sustainability will be baked into everything employers (and colleges and universities) do; employees and students want their organization(s) to be sourcing with a sustainability lens. Research at Arizona State University’s Sustainable Purchasing Research Initiative shows that employees’ attitudes about the environment can help spur an organization or agency to become a green purchasing leader, where “48 percent of directors in cities that have a green purchasing policy reported that employee attitudes “Facilitate” or “Strongly Facilitate” their ability to implement green purchasing.”<sup>5</sup>

Millennials want to see information and data to substantiate claims of sustainability, which means that institutional purchasers will be seeking more detailed, accurate and nuanced (e.g., full lifecycle) data from vendors to support environmental goals. There is an expectation of transparency where information about the specifics of IT products environmental performance and supply chain will be shared with millennial students and employees.

### Mobility and Freedom to Work...Wherever

Along with their commitment to sustainability and minimizing an organization’s environmental footprint, millennials value flexible work options, which means that the workplace itself will have to look different. Millennials seek options to work from home more often, and work from different office settings depending on specific work needs. February

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<sup>2</sup> Anthony Ciluffo, D’Vera Cohn, “10 demographic trends shaping the U.S. and the world in 2017”, Pew Research Center, April 27, 2017, <http://www.pewresearch.org/fact-tank/2017/04/27/10-demographic-trends-shaping-the-u-s-and-the-world-in-2017/>.

<sup>3</sup> Debra Donston-Miller, “Workforce 2020: What You Need to Know Now”, Forbes, May 5, 2016, <https://www.forbes.com/sites/workday/2016/05/05/workforce-2020-what-you-need-to-know-now/#60a1614c2d63>

<sup>4</sup> Ibid.

<sup>5</sup> Darnall N., Stritch J.M., Bretschneider S., Hsueh L., Duscha M., Iles J., No W., Suarez J., Burwell C. 2017. *Advancing Green Purchasing in Local Governments*. Phoenix: Arizona State University, Center for Organization Research and Design, Sustainable Purchasing Research Initiative, 23.

2017 Gallup published survey data found that in 2016, over 40% percent of employed Americans spent some time working remotely and that flexible work location and telecommuting options played a major role in employees' choosing to take a position.<sup>6</sup> This demand for flexibility is motivating purchasers to procure multi-use workstations, conference call and screen-sharing systems to support remote worker collaboration, and increasing their focus on cloud computing to help make "freedom to work...wherever" a reality.

## THE INCREASING DEMAND FOR CLOUD COMPUTING

The increasing demand for cloud services is a natural extension of the shifting workforce's

"As cloud computing and digitization continue to grow at unprecedented levels, so too does the need for greater sophistication in how we understand and measure the impact of ICT sector products."

**-Kris Spriano, Program Manager, Sustainable Purchasing Leadership Council**

emphasis on flexibility and accessing large data at any time and from anywhere. Nearly half of millennials check their phone more than 50 times a day, three times the rate of Baby Boomers (16%). One out of four Millennials even check their smartphone more than 100+ times a day.<sup>7</sup> This reliance on flexibility and location independence provided by mobile devices contributes to

increased demand for cloud computing. The shift to mobile is about creating application, data and services portability across locations and devices. Cloud computing provides a critical role in helping mobile achieve this value proposition. Cloud is at the core of enabling new service innovation.<sup>8</sup>

NASPO ValuePoint, a non-profit subsidiary of the National Association of State Procurement Officials, and the largest public cooperative contracting organization in the United States recognizes the shift from sustainable hardware to sustainable IT services such as cloud computing.

<sup>6</sup> "State of the American Workplace," Gallup, Inc. (2017): 5.

<sup>7</sup> B2X in cooperation with Prof. Hess and Prof. Meyer of the Ludwig, Maximilian University of Munich and Facit Research, "Smartphone and IoT Consumer Trends 2017: Executive Summary", B2X, accessed March 15, 2018, <https://b2x.com/wp-content/uploads/2018/01/B2X-Smartphone-and-IoT-Consumer-Trends-Executive-Summary.pdf>

<sup>8</sup> Maribel Lopez, "What Mobile Cloud Means for Your Business," Forbes, April 6, 2015, <https://www.forbes.com/sites/maribellopez/2015/04/06/what-mobile-cloud-means-for-your-business/#5c130f0378c3>

***“We are in the middle of profound shift caused by technology driven transformation and economics.*** As we move ever increasingly to, “As a Service,” “Cloud Based” and “IoT” technology solutions, state and local government’s service to hardware purchasing ratio is tipping towards more services and less hardware.

*NASPO ValuePoint's multi-state cooperative procurements still involve a large volume of hardware purchases, but over the past three years state and local governments are asking for new technology products and services including Cloud Solutions; Public Safety Video (Body Worn Camera Systems); IoT solutions in Wireless Services, Medicaid Service Modules and Cyber Security related services. Even existing contracts like our Data Communication Products and Services is seeing a shift to more services used in networks and data centers. But, these shifts in technology should not mean states and local governments are walking back from their goals for sustainability and environmental purchasing. A government’s carbon footprint should become no less visible because it moves an application from an on-premise operation to a cloud provider.*

*New technology service models will impact what EPEAT does. States will continue to need help identifying the environmental impacts for electronic devices sold to government, but will need help with the same kind of transparency for the hardware used by government service providers. It will require new criteria to evaluate the environmental operating impacts by the service providers and service provider relationships that use very different operating models than in the past. It almost certainly will require new work groups and new categories of evaluation as government’s use of new technology models increase.*

*While the technology delivery models are changing at an escalating pace, state and local government commitments to environmentally responsible purchasing and sustainability cannot stop just because what we buy is shifting. As governments make smart purchasing decisions to acquire these new technology-enabled service models for the benefit their residents, they will also want to continue making sound environmental decisions.”*

***- Shannon Berry***, Cooperative Development Coordinator and Dugan Petty, Education and Outreach Coordinator for ICT, NASPO ValuePoint

**The shift towards cloud computing continues at a fast pace and poses challenges for sustainable procurement leaders.** The worldwide cloud computing market grew 28% to \$110 billion in 2015. Spending on public cloud Infrastructure as a Service hardware and software is forecast to reach \$173 billion in 2026.<sup>9</sup> With the growth of cloud services adoption, procurement teams will need to consider how to ask for and assess sustainability metrics from cloud service providers.

## Cloud Service Provider Data Takes Center Stage

It is currently difficult for purchasers to get accurate information about the environmental impact of their cloud service providers. Data centers are big source of energy use. As Gary Cook, Senior Energy Analyst of Greenpeace USA pointed out, “Measuring the true impact of cloud computing is the Wild West of measurement. Corporations and city governments have climate commitments and want to act in alignment with them, however, there is poor data and a lack of transparency out there to support their efforts.”

While several industry-sponsored studies have found that cloud computing can be as much as 87% more energy efficient than traditional owned data centers<sup>10</sup>, it will be important for purchasers to be able to access transparent information about the environmental impact of shifting to the cloud.

GEC partnered with a team of Arizona State University (ASU) graduate students to better understand the environmental impact of cloud computing services. The team focused on how purchasers defined “cloud services,” attempted to identify relevant sustainability characteristics of those services and sought to provide guidance to institutional purchasers about how to credibly claim sustainability gains associated with their transition from on-premise data centers to cloud services. ASU considered publicly available data from various cloud-service providers and had consultations with several technical and procurement experts. The team identified a number of significant challenges facing purchasers including lack of recent data about the sustainability benefits associated with cloud services and cloud services providers communicating the sustainability gains by using different terminology. The team predicted that purchasers will continue struggling to identify potential sustainability gains associated with their transition to the cloud until there is updated research and until service providers use consistent and similar sustainability benefits terminology.

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<sup>9</sup> Louis Columbus, “Roundup of Cloud Computing Forecasts and Market Estimates, 2016,” Forbes, March 13, 2016, <https://www.forbes.com/sites/louiscolombus/2016/03/13/roundup-of-cloud-computing-forecasts-and-market-estimates-2016/#3d414a8f2187>.

<sup>10</sup> Masanet, E., Shehabi, A., Ramakrishnan, L., Liang, J., Ma, X., Walker, B., Hendrix, V., and P. Mantha (2013). *The Energy Efficiency Potential of Cloud- Based Software: A U.S. Case Study*. Lawrence Berkeley National Laboratory, Berkeley, California.

## **SUSTAINABILITY EXCELLENCE IS NOT AN ACCIDENT - LEADERSHIP REQUIRED!**

*“Sustainable procurement in local governments is a story about organizational change. Whatever shared values and norms that existed previously about purchasing boundaries are shifting and changing. Sustained leadership at the top level is essential to navigate this change.”* - Nicole Darnall, PhD, Arizona State University, Center for Organization Research and Design, Sustainable Purchasing Research Initiative

Employers and institutions of higher education that establish themselves as sustainability leaders not only reap the benefits of reduced environmental impact and resource efficiencies from their choices, they become magnets for students and employees wanting to make sure that their personal values are aligned with their employers and schools. Organizations and agencies that are leaders in consistently purchasing sustainable IT services and products have a few things in common; it is not by accident that they attain leadership status in this area.

### **Mandate Sustainable Procurement**

*ITI and our members are strong supporters of green procurement programs that help governments and institutions make ICT purchasing decisions that drive measurable energy and environmental progress. The tech sector has long been at the forefront of advancing sustainability, including our ongoing work on green purchasing standards and labels. We will continue to advocate for well-governed procurement programs that are grounded on voluntary consensus-based standards, deliver sustainable products to all of our customers, and yield proven benefits for the environment.”*

Information Technology Industry Council

A strong mandate, whether provided through regulation, internal policies, or other forms, is essential to successful sustainable procurement of IT for institutional purchasers. Members of procurement teams have numerous edicts and protocols to comply with and having a requirement in place is a strong first step in ensuring that sustainability criteria are factored into requests for competitive bids and included in contracts with IT suppliers. Mandates that specify procurement of sustainable IT hardware and services provides a foundation for success. A mandate serves as a useful framework for sustainable IT procurement accountability, especially when it's coupled with strong internal outreach about how the sustainable procurement policies enhance workforce performance; the environmental, social and cost savings benefits of sustainable IT procurement; and the ways that sustainable IT hardware and services support the organization's mission.

## What Does Sustainability Look Like? Be Specific

The job of institutional purchasers, tasked with implementing sustainability procurement policies, is made much easier when they are provided with specific environmental criteria to follow. EPEAT, Energy Star and the Responsible Business Alliance (RBA), among other ecolabels and best practices, are frequently specified by governments, academic institutions, companies and other entities. Use of EPEAT is particularly widespread; brands representing nearly 95% of the global market share of computers (and displays) and imaging equipment offer EPEAT-registered devices. In addition, brands representing about one-third of the global market share of televisions and mobile devices offer EPEAT-registered devices.

## Build Awareness and Use Data

Building awareness about the benefits of sustainable IT with procurement staff, Chief Technology Officers, Risk Officers and internal sustainability teams is essential for successful implementation of sustainable purchasing initiatives. Stakeholders interviewed for this report spoke about the importance of conducting outreach with specific, detailed and quantifiable information about the ways that sustainable IT increase staff retention, result in cost savings due to reduced energy consumption, increase mission readiness through efficient mobile solutions, and are an expectation of shareholders. Aggregated and macro perspectives supported by data make a difference; **environmental benefits calculators** were cited as helpful in developing information for internal use when building awareness and gaining buy-in for sustainable IT purchasing decisions.

Research also shows that while leadership is important in establishing the frameworks needed for sustainable procurement of IT to succeed; the very same leadership and foresight is also linked to improved agency or organizational performance in other areas. A recent study of municipalities' use of sustainable procurement policies showed that the resulting improvements in environmental performance of the supply chain also saved money. "Related to cities' use of contracts to reduce purchasing costs, 87 percent of directors in cities with green purchasing policies reported that they use these types of cost-reduction contracts. This compares with 79 percent of directors in cities without green purchasing policies. While the proportional difference between the two types of cities is small, it is still statistically significant and important because these types of contracts can be utilized to advance green purchasing concerns and may be a tool for cities to reduce their costs and environmental impacts."<sup>11</sup>

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<sup>11</sup> Darnall N., Stritch J.M., Bretschneider S., Hsueh L., Duscha M., Iles J., No W., Suarez J., Burwell C. 2017. *Advancing Green Purchasing in Local Governments*. Phoenix: Arizona State University, Center for Organization Research and Design, Sustainable Purchasing Research Initiative, 20.

## INSTITUTIONAL PURCHASER NOTED TECHNOLOGY TRENDS

### Software and Electronic Waste

While employees may be demanding newer and faster IT, procurement professionals also need to extend equipment life whenever possible to reduce electronic waste streams and stay within available budgets. Faced with these challenges, software can be purchasers' friend or foe in extending the life of IT hardware.

Software solutions can extend the useful life of hardware; however, new software and/or software upgrades can also cause the opposite to occur – reduced speed or hardware performance, potentially making it obsolete and creating IT waste. This phenomenon is referred to as “Software-Induced Hardware Obsolescence”. Users want to continue using hardware for 3-5 years, but

certain software upgrades can reduce or slow the performance of systems over time, frustrating users and forcing them to consider whether they should try to accelerate equipment upgrades simply to support upgraded software. Purchasers interviewed for this report are increasingly looking at the role of software in product sustainability. Most “sustainable IT” criteria have been focused on hardware, however the future might bring an opportunity to address the role that software plays in the useful life of hardware and in generating or accelerating the generation of IT waste.

GREENSPECTOR is a company that offers software solutions to help IT hardware consume less energy and, in some cases, extend effective operational life. Thierry Leboucq, Chairman of GREENSPECTOR sums up this issue by stating “We work with our customers who are frustrated with accelerated “hardware obsolescence”. If a user’s software goes through a major update or if it is replaced with another software, plus if this operation requires additional physical resources (more powerful machines, different technologies), then we can consider older hardware as obsolete or software-induced waste. This is a phenomenon of “hardware obsolescence” caused by software renewal: hence, software is responsible for the wastes.”

### Leveraging Technology to Increase Resilience

With an increase in major weather events, purchasers are being tasked to include resilience as a factor in their sourcing and procurement decisions. This includes procuring IT that will help employees reengage in the aftermath of an emergency, maintaining connectivity or assuring rapid response to major disruptions, and using technology to understand and monitor the resiliency of the organizations supply chain.

For some, resilience could mean redundancy of systems and/or increasing cloud-based storage. “Superstorm Sandy”, a major hurricane impacting eight countries in October 2012, was cited as a major disruption in state and local and business operations that required mobilizing complex logistics infrastructure, coordinating communications with numerous agencies and organizations, distributing emergency medical care and food, water, and evacuation support. New Jersey and New York were particularly hard hit, and a survey conducted of over 130 data center operators in the northeastern U.S. about lessons learned and response to the storm indicated that a “number of respondents were able to shift IT loads to remote sites, including sharing IT workload or uptime of cloud service providers.” In addition, when considering lessons learned to ensure greater resilience in the future, respondents wanted to “Establish closer working relationships with cloud service providers to make sure their sites have redundancy.”<sup>12</sup>

It is important to manage for resilience in times of disruption (from natural or other disasters), while ensuring that redundancies are in place, information is secure and accessible in the cloud, and that devices are extremely energy efficient when operating in a limited resource environment.

## CONCLUSION

With this report, GEC hopes to shed some light on the drivers for sustainable procurement as identified through interviews with a number of relevant stakeholders.

With millennials projected to be a majority of the workforce in the near future, they play an important role in evolving workforce culture. The increase of millennials in the workforce is accompanied by employees’ desire for location freedom for doing work, their interest in aligning the workplace with their values, including sustainability, and their insistence on transparency in measuring and achieving environmental goals. To satisfy the millennial-dominated workforce, and to ensure that employers are able to attract and retain a pipeline of high caliber employees, organizations will need to ensure that they are responsive to the technology and sustainability expectations of the workforce.

The need for speed and innovation from IT services and products, as well the increasing demands for remote work access and location independence, will increase the demand for cloud computing services. Procurement teams will need to consider how to ask for and assess sustainability metrics from suppliers, including those that provide cloud services. The general lack of transparency in measuring and reporting the environmental impact of data centers that make cloud computing a reality will continue to be a challenge in the immediate future.

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<sup>12</sup> Seidman, Debbie and Renaud, Vince. Lessons Learned from Superstorm Sandy: *An Uptime Institute survey reveals that best practices and preparation pay dividends* <https://journal.uptimeinstitute.com/disaster-recovery-lessons-learned-superstorm-sandy/>.

In addition to trends in the workplace, GEC heard about the required elements for strong sustainable procurement programs. Commitment from the top and providing procurement teams with specific guidelines help position an organization for leadership in sustainable IT procurement. Increasing buy-in with staff is also an essential part of successful sustainable procurement programs, especially when environmental benefits and cost savings data is used to build a compelling case for sustainable procurement strategies.

Other technology trends include the increasing importance of software, and the seemingly contradictory role it can play in extending the life of hardware and in some cases, doing the opposite by accelerating the obsolescence and resulting waste of discarded hardware systems.

Lastly, procurement strategies need to support an organization's mission, which in many cases includes resilience. For organizations to be resilient, it is important that procurement approaches are working in tandem with other parts of the organization to help employees be as productive as possible and assist in responding quickly to a major change or disruption, including during major weather events.

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