227 SW Pine St., Suite 300
Portland, OR 97204 USA
+1 503 279 9383
GreenElectronicsCouncil.org

GEC Sustainability Through Cloud Computing Initiative

Institutional purchasers are increasingly choosing to buy cloud services instead of relying solely on their own datacenters. Public and private organizations have several reasons for this transition, including financial savings, improvements in computing scalability, and ease of procurement. While cloud-service purchase decisions are seldom driven by sustainability motivations, the dollar value of cloud-service procurements has contributed to purchasers' eagerness to claim any sustainability benefits associated with their migration to the cloud.

GEC's Sustainability Through Cloud Computing Initiative will help purchasers understand how their cloud-service procurements can contribute to their organizational sustainability goals and to sustainability writ large. We are launching stakeholder working groups to 1) identify attributes of a "sustainable" cloud service, 2) translate those attributes into questions that purchasers can use to gain more information about the sustainability practices of their cloud-service providers, and 3) contribute to the development of a report that identifies scenarios in which transitioning to cloud services may improve the sustainability performance of an organization.

GEC has a Purchaser Guide series and will use the working groups' output to inform the development of a *Purchaser Guide for Organizational Sustainability Through Cloud Computing*. The Guide will be comprised of three core elements:

1. Sustainability Attributes of Cloud Service Providers

This section will identify attributes that indicate the likelihood of a cloud-service provider delivering "sustainable" cloud services. The attributes may not necessarily be quantifiable, but each one must be a credible indicator of a more-sustainable solution. This section will build on research conducted by Arizona State University and others and will incorporate insights from working group members. The attributes will address aspects including but not limited to: datacenter energy use and sources, datacenter efficiency (including facility age, equipment, virtualization, water use, and cooling systems), e-waste, and other aspects.

2. Procurement Questions Based on Sustainability Attributes

This section will translate the sustainability attributes of cloud service providers into questions that purchasers can use throughout procurement. It will also identify questions that purchasers should ask internally to establish a "non-cloud" baseline that helps identify whether cloud services are more sustainable. The goal is to create consistency in the questions asked of cloud service providers and the documentation provided in response, ultimately encouraging providers to regularly collect and share sustainability-related data with the purchasing community. The data captured by purchasers can be used as part of their sustainability-reporting process.

3. How and When Cloud Computing Can Contribute to Sustainability

This section will provide examples of how and when migrating to cloud services can provide organizational sustainability benefits. The section will correlate to the attributes identified in Section 1 and provide context for purchasers to claim credible sustainability benefits associated with their transition to the cloud.

Working Group Timeline

- **June**: Confirm working group participants. Send invitations and background materials for July 26 working group launch meeting. Background materials include:
    - What exactly purchasers are buying when they buy "cloud-services." This will be based on examples of cloud-services procurement language and data provided by market analysts.
    - Draft list of cloud service providers' sustainability attributes. This will be based on interviews with working group participants and research already completed (NRDC, LBNL, ASU and others).
    - Notes from GEC's April 24 meeting that reviewed the output of ASU Student research
- **July 26**: In-person working group launch meeting
- **August - October**: Ongoing working group discussions
- **November**: Distribute draft Purchaser Guide to working group participants. Second in-person working group meeting.
- **December**: Finalize GEC's *Purchaser Guide for Organizational Sustainability Through Cloud Computing*

Working Group Membership

GEC welcomes representatives from industry, academia and the purchasing community to join the working groups. Each group will focus on one of two areas:

1. **How and When Cloud Computing Can Contribute to Sustainability**
   This working group will identify real-world scenarios in which migrating to the cloud can generate tangible sustainability gains. Participants will use case studies and best practices that incorporate specific metrics, even if data must be anonymized to preserve the sources' identity. These best practices should correlate to the sustainability attributes identified by the other working group. Participants may choose to develop and test working hypotheses based on previous research or experience. The output will provide important context about the type(s) and scale of cloud services that can deliver credible sustainability benefits compared to purchasers relying solely on their own datacenters.

2. **Sustainability Attributes of Cloud Service Providers**
   This working group will identify attributes that may indicate the likelihood of a cloud-service provider delivering "sustainable" cloud services. Working group members will consider attributes that may be common across multiple providers but allow for differentiation. Attributes will be identified based on publicly available information and insights shared in the working group. Members will also draft questions that purchasers can incorporate into their procurement process to evaluate whether service providers exhibit the sustainability attributes, and whether moving to the cloud will enable sustainability gains.