Sustainability Successes at the East Tennessee Technology Park – Synergy with the Federal Green Challenge Program

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Safely Delivering DOE's Vision for the East Tennessee Technology Park Mission

ETTP Sustainable Practices: A Brief History

- The East Tennessee Technology Park is the site of the former Oak Ridge Gaseous Diffusion Plant. DOE's current site mission is to decommission, demolish and dispose of facilities associated with uranium production and remediate contaminated environmental media.

- D&D's mission, by its nature, is one of closure making sustainable practices challenging at times.

In spite of closure mission, the ETTP has historically leveraged the following to succeed with sustainable practices:

- A small Information Technology (IT) organization who immediately recognized the connection between green electronics stewardship and business efficiencies
- Formally implemented and declared conformance with the ISO 14001 standard
- Tightly bound the EMS to work control, thus making P2/WMin a part of everyday practices (planning, executing and continuous improvement)
- Implemented an annual Pollution Prevention Awards program that instantly became an important engagement program across the varied work scope performed, further supporting P2/WMin tenets
- Looked to outside programs such Federal Electronics Challenge and Federal Green Challenge, among others to further stretch goals and foster continual improvement in sustainability arena

- Historically, the ETTP IT department made electronics stewardship a priority.
    - Purchased recycled and remanufactured toner cartridges
    - Continually consolidated the server footprint annually by replacing energy-intensive servers with virtual ones
        - ✓ Less hardware maintenance
        - ✓ Significantly less energy and cooling requirements and associated costs
    - Purchased Energy Star equipment (servers, and any other electronics not on EPEAT at the time such as plotters, printers, tablets, etc.)
- EPEAT desktops, laptops and monitors (silver and gold) were ordered before contractual drivers required it

- Upon inception of EPA's Federal Electronic Challenge (FEC) program ETTP was encouraged by Jeff Eagan (DOE HS-22), a champion of sustainable electronics stewardship, to submit a nomination with the expectation of a Bronze level recognition.

- Due to ETTP's already mature sustainability program, it was immediately eligible for a Silver award by the time the FEC program recognized its first awardees.

ETTP Electronics Stewardship Award Summary

- 2009 P2 EStar Award

- 2010 FEC Silver Award

- 2011 FEC Gold Award

- 2012 FEC Platinum Award

- 2013 FEC Platinum Award

- 2013 Department of Energy Sustainability Award

  –Chuck Oldham

- 2014 Department of Energy Sustainability Award

  –Teresa Krannig

- 2015, 2016 EPA Federal Green Challenge Award

- 2016, 2017 EPEAT Award 2 Star Level, Computers and Monitors

Status of ETTP's IT Sustainability Program

- The ETTP orders 100% EPEAT Gold computers, laptops and monitors (EMS Target).

- Life cycle is a minimum of 5 years (EMS Target).

- IT administrator implemented managed print services in 2013, migrating the ETTP's individually focused printer model to a centrally managed one with the following benefits:
  - ✓ 34% fewer printers deployed
  - ✓ 494 fewer reams of paper used
  - ✓ $92,600 saved in the first year through reduced toner and paper usage
  - ✓ Copy paper usage was reduced by 247,044 pages
  - ✓ 14,000 kW of energy was conserved
  - ✓ 23,000 gallons of water were saved

- Imaging equipment lease from parent company was renegotiated in 2016.

    - IT administrator individually selected EPEAT imaging devices

    - Imaging equipment is 100% EPEAT

    - Reduced equipment onsite from 180 to 140 (20% reduction)

- Server virtualization has decreased the footprint of physical servers from 240 to approximately 50, saving approximately $125,610 in annual energy costs and $646,000 in new physical hardware costs. This translates to an annual CO_2 reduction of nearly 2 million pounds, or planting 3,000 trees or removing 169 cars from the highway.

- The IT organization created an electronic waste shipping Radio Frequency Identification (RFID) system that provides enormous waste management cost savings through increased efficiency and the virtual elimination of paper shipping documents. The RFID system was shared with numerous other DOE sites that now implement this.

- As of 2014, the ETTP has default two-sided printing set to all of its printers.

- The ETTP recycles all of its used electronics with an R2 recycler.

What's the secret to the ETTP's success in electronics stewardship?

- Top down support; DOE and contract management prioritize electronics stewardship efforts recognizing that energy-efficient products save money and conserve natural resources.

- The ETTP has one person in IT who purchases all the electronics equipment and selects items from energy-efficient-rated registries first, and then sources a vendor for a particular product.

- The IT administrator makes energy and cost savings a top priority in managing print and imaging services.

ETTP Water Usage Successes

- **ETTP site closure mission adopted an accelerated schedule to complete work by 2020 (Vision 2020) yielding a number of sustainability benefits.**

    - With personal and environmental safety still a first priority of a VPP facility, efficient work planning and execution has allowed accelerated building demolition

    - In 2015, numerous buildings were demolished, necessitating use of multiple industrial misters as dust control

    - In 2016, potable water use was drastically reduced due to efficient completion of large amount of demolition the previous year

ETTP Water Usage Successes (Continued)

- As buildings are demolished, fewer resources such as potable water are required (resources in support of demolition, water to large buildings' fire suppression systems are eliminated, etc.)

- Natural resource demands such as potable water are expected to decline until 2020

- Water use reduction was also enhanced by the previous upgrading of firewater infrastructure, including sealing leaks in the piping system