Sustainability in the Server Room:
A K-12 Education Technology Handbook

apc.com/edge

Life Is On | **Schneider** Electric

Introduction

K-12 schools are at the forefront of a digital revolution that promises to redefine the learning experience for future generations. This transformation is powered by information technology departments that support and enhance educational outcomes through digital learning tools and resources. However, as K-12 education technology departments strive to meet the ever-increasing demands of modern education, they encounter significant challenges that threaten to impede progress. Among these challenges, integrating sustainability and energy efficiency into IT operations is a critical concern requiring innovative solutions.

Legacy IT systems designed for a bygone era need help to support the dynamic and always-on expectations of today's digital learning environments. The infrastructure, stretched thin by the increasing reliance on digital tools, faces the daunting task of scaling up without compromising efficiency or environmental responsibility. Furthermore, IT professionals' training around sustainability practices can often be improved, leaving many schools ill-prepared to navigate the complexities of green IT initiatives. Compounding these challenges are the stringent government regulatory and compliance requirements, which add a layer of complexity to sustainability in IT operations.

By choosing data center and power solutions that prioritize sustainability, schools can overcome the barriers to green IT integration. Schneider Electric is committed to sustainability from day one, understanding the unique challenges faced by K-12 IT departments and offering tailored guidance and **solutions** that align with the goals of IT green initiatives. These solutions not only meet the current demands of digital learning but also ensure schools are well-equipped to adapt to future advancements in technology and sustainability practices.

IT sustainability is not just about reducing carbon footprints or complying with regulations. It's about enabling K-12 schools to offer the most advanced educational resources possible. By embracing sustainability in IT operations, schools can ensure they are preparing their students for the future and contributing to the well-being of our communities and the planet. This eBook will explore the challenges, solutions, and benefits of integrating sustainability and energy efficiency into K-12 IT departments.

Defining the Sustainability Challenges of K-12 Education Technology

Integrating K-12 education technology has opened new horizons for teaching and learning. However, this digital transformation comes with sustainability challenges that schools must navigate. Understanding these challenges is the first step toward developing effective strategies for green IT initiatives. The core sustainability challenges faced by K-12 education technology workers include:

- Legacy IT systems
- Increasing demand on infrastructure
- Need for awareness and training around sustainability
- Navigating government regulatory and compliance requirements

Legacy IT Systems

Legacy IT systems in schools are often characterized by outdated hardware and software that isn't optimized for energy efficiency or sustainability. These systems consume excessive electricity, require frequent maintenance, and are incompatible with newer, greener technologies. The challenge lies in transitioning from these legacy systems to modern infrastructure that is both energy-efficient and capable of supporting the dynamic needs of digital learning environments. Upgrading these systems is not just a matter of replacing old equipment; it involves a strategic overhaul of the IT landscape to ensure compatibility, scalability, and sustainability.

Increasing Demand on Infrastructure

The shift toward digital learning tools and the expectation for always-on access to K-12 educational technology have placed unprecedented demands on school IT infrastructure. This includes the need for robust servers, storage solutions, and networking equipment to handle the surge in digital content, student data, and interactive learning applications. The challenge is to scale up this infrastructure sustainably, ensuring it does not lead to an increase in energy consumption or carbon emissions. Schools must explore solutions such as virtualization, cloud computing, and energy-efficient hardware to meet these demands without compromising on their sustainability goals.

Awareness and Training for IT Pros around Sustainability

A significant barrier to implementing green IT initiatives in schools is the need for greater awareness and training among IT professionals regarding sustainability practices. Many IT staff are well-versed in the technical aspects of their work but may need to gain the knowledge or skills to integrate sustainability into their operations. This challenge calls for comprehensive training programs covering energy-efficient computing, sustainable procurement practices, and waste reduction strategies. Schools can ensure that sustainability becomes an integral part of their technology management practices by equipping IT professionals with the necessary knowledge and skills.

This is where a partnership with a dedicated IT solutions provider, such as Schneider Electric, becomes invaluable. Our deep commitment to sustainability and extensive energy management and automation expertise allows us to offer a range of services and resources designed to elevate the sustainability knowledge base of IT professionals in the K-12 sector. Partnering with us gives IT departments access to a wealth of resources, including white papers, case studies, and best-practice guides that provide insights into successful sustainability initiatives. IT professionals can also

benefit from direct access to Schneider Electric's experts, who can offer guidance on specific challenges and help devise customized solutions that align with the school's sustainability goals. We are committed to forming long-term partnerships with schools, providing ongoing support and collaboration to ensure that sustainability efforts are successful and evolve with changing technologies and regulations. This approach ensures K-12 IT departments are not only equipped with the initial knowledge and tools to implement sustainability practices, but also have the support needed to adapt and grow their sustainability initiatives over time.

Government Regulatory and Compliance Requirements

Navigating the complex landscape of government regulatory and compliance requirements is another challenge for K-12 educational technology workers striving for sustainability in their operations. These regulations may include mandates on energy consumption, electronic waste disposal, and the procurement of green technologies. Compliance requires a deep understanding of the legal requirements alongside the ability to implement policies and practices that align with these mandates. Schools must stay informed about relevant regulations and develop compliance strategies that integrate seamlessly with their sustainability objectives.

By addressing these challenges head-on, K-12 schools can lay the groundwork for sustainable IT operations that support their educational mission while contributing to the broader goal of environmental stewardship. The following sections will explore strategies and solutions for overcoming these challenges, paving the way for a greener future in education technology.

How Can IT Tech Impact K-12 Sustainability and Energy Efficiency Goals?

As schools increasingly rely on digital tools and resources, the potential for IT departments to significantly impact sustainability and energy efficiency goals grows. By adopting strategic approaches and innovative solutions, IT professionals can lead their schools toward more sustainable practices that benefit the environment and contribute to the educational mission. Here are key strategies for IT pros to enhance sustainability and energy efficiency within K-12 schools:

Energy Audits: The First Step Towards Efficiency

Conducting energy audits within IT departments is a critical first step in identifying opportunities for reducing energy consumption. These audits provide a comprehensive overview of how energy is used, highlighting areas where improvements can be made. By understanding the specific energy demands of servers, computers, networking equipment, and other digital learning tools, IT professionals can implement targeted strategies to reduce power usage without compromising the quality of education. Energy audits can reveal surprising areas of waste, from over-provisioned servers to inefficient **data center cooling** systems, and pave the way for more sustainable K-12 educational technology operations.

Avoiding E-Waste: A Commitment to the Environment

The rapid pace of technological advancement often leads to a cycle of constant upgrades and replacements, contributing to a growing problem of electronic waste (e-waste). IT departments can play a pivotal role in mitigating this issue by adopting practices that extend the lifespan of devices and responsibly recycle or repurpose outdated equipment. Initiatives such as device refurbishment programs, donating still-functional equipment to less advantaged schools, and choosing electronics with a strong track record of durability can significantly reduce e-waste. Furthermore, by selecting vendors that prioritize recyclable materials and offer take-back programs, schools can ensure that their IT purchases contribute to a circular economy.

Schneider Electric Critical Power and Cooling Services has long been committed to minimizing the global impact of our products. That's why APC by Schneider Electric offers environmentally sound product take-back and **recycling programs** to our consumer and business customers in many countries around the world. You can trade in and/or replace UPS batteries that are at least three years old with genuine APC Replacement Battery Cartridges and get free return shipping of your old batteries which will be disposed of sustainably. Check out our **Replacement Battery Selector** here.

Customers can also trade in their old single-phase UPSs (regardless of brand or functionality) for a new one with a full 2-year warranty and up to a 25% discount off the purchase of a new APC UPS. Get even more savings (up to 40%) on APC accessories with your UPS purchase. **Trade up your UPS**.

You can also recycle your spent UPS batteries — find out how to **generate a prepaid return label** here or visit any of the **Call2Recycle** drop-off locations.

Considering Device Lifecycles: Beyond the Purchase

A holistic approach to sustainability in IT requires consideration of the entire lifecycle of devices, from procurement to disposal. This involves selecting devices not only based on their performance and educational value but also their energy efficiency, repairability, and the manufacturer's commitment to sustainability. IT professionals can influence sustainability outcomes by advocating for devices with lower energy consumption, longer lifespans, and easier repairability. Additionally, implementing device management practices that optimize performance and extend usability can reduce the need for frequent replacements, thereby lowering the environmental impact of the school's IT operations.

By focusing on these areas, K-12 IT professionals can significantly contribute to their schools' sustainability and energy efficiency goals. Energy audits provide a roadmap for reducing consumption, while efforts to avoid e-waste and consider the full lifecycle of devices demonstrate a commitment to environmental stewardship. Together, these strategies enable schools to leverage technology in a way that supports both educational excellence and the well-being of the planet, ensuring students are prepared for a future in which sustainability is paramount.

Integrating Sustainability into Your K-12 Educational Technology Infrastructure

We're dedicated to enhancing the resilience of our products to provide a robust foundation for K-12 educational technology professionals. Our goal is to support the seamless operation and efficiency of your educational institution's IT infrastructure. We offer **Uninterruptible Power Supplies (UPSs)** encased in safely designed **rack enclosures**, complete with power distribution and cooling strategically placed for optimal performance. Our solutions include built-in physical security, monitoring, and **data center management** services, all aimed at fostering a stable IT environment essential for the dynamic needs of K-12 education.

Our innovative designs facilitate the transition from traditional lead-acid to more sustainable, longer-lasting lithium-ion **battery backups**, significantly reducing waste. With over 1000 supplier partnerships, we're committed to producing products with a minimal

environmental footprint, using the least amount of materials necessary. Our **data center designs** are crafted to help schools lower operating costs and scale their IT capabilities efficiently, without expanding their physical footprint.

Product Environmental Profiles

Each Schneider Electric product is accompanied by a Product Environmental Profile (PEP), offering detailed insights to help K-12 schools set a sustainability benchmark and track progress toward their environmental goals. The PEP covers:

- The materials used in the product
- Substance assessment
- The manufacturing process
- Distribution
- Usage
- End-of-life management
- Overall environmental impacts

This information proves invaluable for schools looking to upgrade outdated equipment and document the sustainability benefits of new installations. **See an example of a PEP** to see how it can assist in your sustainability journey.

Energy Star 2.0 Compliance

Schneider Electric is at the forefront of adhering to the stringent Energy Star 2.0 standards for External Power Supplies (EPSs) and UPSs, aimed at significantly reducing energy consumption. Adopting products that meet these updated criteria can lead to substantial savings, helping schools **manage energy costs more effectively** and contribute to a greener future.

Get Personalized K-12 Education Technology Sustainability Guidance

Schneider Electric has been recognized as a global leader in response to climate change and has been awarded a position on The Climate "A" List by the Carbon Disclosure Project for the 5th year in a row. Now that you know more about how we can help your K-12 education IT department contribute to sustainability goals, **contact Schneider Electric** here or call us at 1 (877) 800-4272 to arrange a personalized consultation.

Schneider Electric provides TAA-Compliant Offers that meet the requirements of the Trade Agreements Act (TAA). The TAA is intended to foster fair and open international trade. It requires that all products be produced or undergo "substantial transformation" within the United States or a designated country.

Schneider Electric **TAA-compliant offers** include:
- Uninterruptible Power Supplies (UPSs)
- Racks and Accessories

Life Is On | **Schneider** Electric

We can help you tackle anything, from basic preventive services all the way to redesigning your permanent IT backbone.

Call us at 1 (877) 800-4272 to get started, or check out our partner selector tool to find a partner ready to support you.

apc.com/edge